		Fight (Ro	ound no.): ે	Room: 💃
Scoring	Guidelines	Juror:	PLESCH	Sign

Fight (Round no.): Room:	Stage:	: Problem no.:	_
Juror: PCESCH	Signature:	V 5	_

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent *challenged* the *reporter's understanding* of the presented *concepts*, *theories* and *principles* • the opponent understood the *appropriate mathematics* presented • the opponent *critiqued* the *experimental technique* used and questioned the *validity* of the *data* • the opponent appreciated and highlighted the *strengths and weaknesses* of the report

A review should show that:

- the reviewer succeeded in giving an *objective summary* of the performances the *reporter* and *opponent* the reviewer appreciated the *important aspects* (especially the *controversial* ones) the reviewer's *personal opinion* was in evidence (*not* just *superficial observations*) such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's *understanding* of *concepts*, *theories*, *principles and appropriate mathematics* used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role.
- The reporter, opponent and reviewer each start with 5 points.
- Consider the following *suggestions* to *add* to or *deduct* from the initial *5 points*.
- Select each partial grade from each section and write it in the corresponding box.

 Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find. 											
Rep.: 5	Opp.: 5	Rev.: 5									
Physics ±3	Physics ±3	Physics ±3									
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics									
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach									
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions									
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers									
Presentation ±1	Presentation ±1	Presentation ±1									
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable									
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner									
Overall impression	Overall impression	☐ Overall impression									
Reporter ±1	Opponent ±1	Reviewer ±1									
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion									
☐ Structure	☐ Shows the strong and weak points	☐ Expresses own opinion about									
☐ Explanation of formulae and	of the report	topics presented or discussed									
symbols Appropriate models conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent									
Appropriate models, conformity of dimensions	☐ Relevance of the questions	☐ Draws attention to points missed									
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent									
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and									
☐ Novelty of the report		fight assistant, so we are archive your partial grades – please									
☐ Contribution to the discussion		do not bend									
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Final Grade: Opponent

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	CO	1	ı		E.			u	8	W		Ħ	ı		- Table	2
						Barrell			-		_	_	_			

Rep .: AUSTRIA

☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers

Presentation ±1

Reporter ±1

☐ Structure

☐ Novelty of the report

Final Grade: Reporter

☐ Clear and understandable ☐ Appropriate manner ☐ Overall impression

☐ Explanation of formulae and

Appropriate models, conformity

☐ Slides, on-site experiments, audio,

References, proper citations of ideas and input of others

☐ Contribution to the discussion

☐ Correct and relevant physics

Physics ±3

	Finite (Parameters) 5						
Scoring Guidelii	noc	n: <u>(=</u> Stage: / Problem no.: 9					
	Juror: YHIL ONEILL	Signature: 170 Will					
A report should include:							
application of appropriate mathematics • r	ets, theories and principles of the problem • an e easonable experimental technique to gather and i experimental findings to draw suitable conclusion dable manner	record data (or demonstrate the phenomena if					
An opposition should show that: • the opponent <i>challenged</i> the <i>reporter's u</i> **appropriate mathematics presented • the opponent appreciated and highlighted the statement of	nderstanding of the presented concepts, theories pponent critiqued the experimental technique use	and <i>principles</i> • the opponent understood the d and questioned the <i>validity</i> of the <i>data</i> • the					
A review should show that:							
important aspects (especially the controver	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in on-trivial and demonstrated, where possible, the red by the reporter and the opponent	evidence (not just superficial observations) •					
The <i>reporter, opponent</i> and <i>reviewer</i> Consider the following <i>suggestions</i> to Select each partial grade from each se	consists of a partial grade for <i>physics</i> , <i>present</i> each <i>start with 5 points</i> . add to or <i>deduct</i> from the initial <i>5 points</i> . ction and <i>write it</i> in the corresponding box. no questions were posed or not finding shortcom.						
Rep.: AUSTRIA 5	Opp.: 5 LOVEN, A 5	Rev.: CHINA 5					
hysics ±3	Physics ±3	Physics ±3					
Correct and relevant physics	Correct and relevant physics	☐ Correct and relevant physics					
Scientific approach	☐ Scientific approach	☐ Scientific approach					
J Validity of conclusions J Accurate answers	☐ Validity of conclusions	☐ Validity of conclusions					
Accurate answers	☐ Accurate answers	☐ Accurate answers					
resentation ±1	Presentation ±1	Presentation ±1					
Clear and understandable	Clear and understandable	☐ Clear and understandable					
Appropriate manner	☐ Appropriate manner	Appropriate manner					
Overall impression	U Overall impression	U Overall impression					
eporter ±1	Opponent ±1	Reviewer ±1					
Y Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion					
Structure	Shows the strong and weak points of the report	☐ Expresses own opinion about					
Explanation of formulae and symbols	☐ Finds shortcomings or errors in	topics presented or discussed Relevance of questions to both the					
Appropriate models, conformity of dimensions	the report Relevance of the questions	reporter and the opponent Draws attention to points missed					
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent					
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and					
Novelty of the report		fight assistant, so we are archive your partial grades – please					
Contribution to the discussion		do not bend					
7	Final Grade: Opponent						
inal Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer					

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Fight (Round no.): 5	_ Room: Stage: _	Problem no.:
Juror: YE YEO	Signature:	Clark

Revised after IOC feedback and approved by EC on 2011-11-03

A report should include:

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent *challenged* the *reporter's understanding* of the presented *concepts, theories* and *principles* • the opponent understood the *appropriate mathematics* presented • the opponent *critiqued* the *experimental technique* used and questioned the *validity* of the *data* • the opponent appreciated and highlighted the *strengths and weaknesses* of the report

A review should show that:

- the reviewer succeeded in giving an *objective summary* of the performances the *reporter* and *opponent* the reviewer appreciated the *important aspects* (especially the *controversial* ones) the reviewer's *personal opinion* was in evidence (*not* just *superficial observations*) such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's *understanding* of *concepts*, *theories*, *principles* and *appropriate mathematics* used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role.
- The reporter, opponent and reviewer each start with 5 points.
- Consider the following suggestions to add to or deduct from the initial 5 points.

	tion and write it in the corresponding box. o questions were posed or not finding shorted	omings if there were none to find.					
Rep.:5	Opp.:5	Rev.: 5					
Physics ±3	Physics ±3	Physics ±3					
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics					
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach					
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions					
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers					
Presentation ±1	Presentation ±1	Presentation ±1					
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable					
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner					
Overall impression	☐ Overall impression	☐ Overall impression					
Reporter ±1	Opponent ±1	Reviewer ±1					
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion					
☐ Structure	☐ Shows the strong and weak points	☐ Expresses own opinion about					
☐ Explanation of formulae and	of the report	topics presented or discussed					
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent					
of dimensions	☐ Relevance of the questions	☐ Draws attention to points missed					
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	Draws attention to points missed by the reporter or the opponent					
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and					
☐ Novelty of the report		fight assistant, so we can archive your partial grades – please					
☐ Contribution to the discussion		do not bend					
Final Grade: Reporter	Final Grade: Opponent	Final Grade: Reviewer					

Scoring Guide

☐ Contribution to the discussion

		<i>=</i>					
Scoring Guidelin		n: Stage:/ Problem no.: L Signature: XoUali					
application of appropriate mathematics • re	ts, theories and principles of the problem • an estasonable experimental technique to gather and experimental findings to draw suitable conclusionable manner	record data (or demonstrate the phenomena if					
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the street.	derstanding of the presented concepts, theories opponent critiqued the experimental technique use rengths and weaknesses of the report	and <i>principles</i> • the opponent understood the data of					
important aspects (especially the controvers	tive summary of the performances the reporter ial ones) • the reviewer's personal opinion was in n-trivial and demonstrated, where possible, the red by the reporter and the opponent	n evidence (not just superficial observations) •					
 The reporter, opponent and reviewer e Consider the following suggestions to e Select each partial grade from each sec 	consists of a partial grade for <i>physics, presen</i> teach start with 5 points. add to or deduct from the initial 5 points. Ition and write it in the corresponding box. To questions were posed or not finding shortcomes.						
Rep.:	Opp.: 5	Rev.: 5					
Physics ±3 ☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers	Physics ±3 ☐ Correct and relevant physics ☐ Scientific approach ☐ Validity of conclusions ☐ Accurate answers	Physics ±3 Correct and relevant physics Scientific approach Validity of conclusions Accurate answers					
Presentation ±1 Clear and understandable Appropriate manner Overall impression	Presentation ±1 Clear and understandable Appropriate manner Overall impression	Presentation ±1 Clear and understandable Appropriate manner Overall impression					
Reporter ±1	Opponent ±1	Reviewer ±1					
☐ Quality of experimental technique(s) ☐ Structure ☐ Explanation of formulae and symbols ☐ Appropriate models, conformity of dimensions	Response to the reporter's solution Shows the strong and weak points of the report Finds shortcomings or errors in the report	Provides a thorough review of report and discussion Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent					
☐ Slides, on-site experiments, audio, video, as appropriate ☐ References, proper citations of	☐ Relevance of the questions ☐ Contribution to the discussion	Draws attention to points missed by the reporter or the opponent This sheet will be collected by the					
ideas and input of others Novelty of the report Contribution to the discussion		This sheet will be constant and fight assistant, so we can scan it and archive your partial grades – please do not bend					

Final Grade: Reporter

Final Grade: Opponent

Scoring Guidelin	Fight (Round no.): Roon 105 Juror: Rover R. Herry	n: 7 Stage: 1 Problem no.:					
application of appropriate mathematics • re	ts, theories and principles of the problem • an easonable experimental technique to gather and in experimental findings to draw suitable conclusion dable manner	record data (or demonstrate the phenomena if					
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the st.	nderstanding of the presented concepts, theories pponent critiqued the experimental technique use rengths and weaknesses of the report	and <i>principles</i> • the opponent understood the data • the					
important aspects (especially the controvers	itive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in in-trivial and demonstrated, where possible, the red by the reporter and the opponent	evidence (not just superficial observations) •					
The <i>reporter</i> , <i>opponent</i> and <i>reviewer</i> of Consider the following <i>suggestions</i> to a Select each partial grade from each second Don't punish missing 'answers' when n	consists of a partial grade for <i>physics, present</i> each <i>start with 5 points</i> . add to or <i>deduct</i> from the initial <i>5 points</i> . ction and <i>write it</i> in the corresponding box. to questions were posed or not finding shortco	omings if there were none to find.					
Rep.: Pust m'a 5	Opp.: Stonewice 5	Rev.: (4, 40 5					
Physics ±3	Physics ±3	Physics ±3					
Correct and relevant physics	Correct and relevant physics	☐ Correct and relevant physics					
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach					
☐ Validity of conclusions ☐	☐ Validity of conclusions	☐ Validity of conclusions					
Accurate answers	Accurate answers	☐ Accurate answers					
Presentation ±1	Presentation ±1	Presentation ±1					
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable					
Appropriate manner	☐ Appropriate manner	☐ Appropriate manner					
Overall impression	Overall impression	☐ Overall impression					
Reporter ±1	Opponent ±1	Reviewer ±1					
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion					
] Structure	☐ Shows the strong and weak points	Expresses own opinion about					
Explanation of formulae and symbols	of the report Finds shortcomings or errors in	topics presented or discussed Relevance of questions to both the					
Appropriate models, conformity	the report	reporter and the opponent					
of dimensions Slides, on-site experiments, audio,	☐ Relevance of the questions ☐ Contribution to the discussion	Draws attention to points missed by the reporter or the opponent					
video, as appropriate References, proper citations of		This sheet will be collected by the					
ideas and input of others Novelty of the report		fight assistant, so we can scan it and archive your partial grades – please					

Final Grade: Reporter

 \square Contribution to the discussion

Final Grade: Opponent

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Final Grade: Reporter

	Fight (Round no.): 5 Room	m: <u>E</u> Stage: <u>1</u> Problem no.: <u>9</u>					
Scoring Guideli	nes Juror: Daniela Ivanova						
A report should include:							
• a presentation of the appropriate conception of appropriate mathematics • 1	ots, theories and principles of the problem • an reasonable experimental technique to gather and experimental findings to draw suitable conclusionable manner	record data (or demonstrate the phenomena if					
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the copponent appreciated and highlighted the s	nderstanding of the presented concepts, theories apponent critiqued the experimental technique use	and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the					
A review should show that:							
important aspects (especially the controver	ctive summary of the performances the reporter resial ones) • the reviewer's personal opinion was in con-trivial and demonstrated, where possible, the red by the reporter and the opponent	n evidence (not just superficial observations) a					
 The reporter, apponent and reviewer Consider the following suggestions to Select each partial grade from each se 	consists of a partial grade for <i>physics, presen</i> each <i>start with 5 points</i> . add to or <i>deduct</i> from the initial <i>5 points</i> . ction and write it in the corresponding box. no questions were posed or not finding shorte						
Rep.: Paul Warten 5	Opp.: Žiga Gosar 5	Rev.: Yihan Liv 5					
Physics ±3	Physics ±3	Physics ±3					
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics					
Scientific approach	☐ Scientific approach	☐ Scientific approach					
☐ Validity of conclusions☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers					
Presentation ±1	Presentation ±1	Presentation ±1					
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable					
☐ Appropriate manner	Appropriate manner	☐ Appropriate manner					
Overall impression	☐ Overall impression	Overall impression					
Reporter ±1	Opponent ±1	Reviewer ±1					
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion					
☐ Structure	Shows the strong and weak points of the report	Expresses own opinion about					
Explanation of formulae and symbols	Finds shortcomings or errors in the report	topics presented or discussed Relevance of questions to both the reporter and the opponent					
Appropriate models, conformity of dimensions	Relevance of the questions	Draws attention to points missed					
Slides, on-site experiments, audio, video, as appropriate	Contribution to the discussion	by the reporter or the opponent					
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and					
☐ Novelty of the report		archive your partial grades					
☐ Contribution to the discussion		do not bend					

Final Grade: Opponent

		Fight (Ro	ound no.):	Room:	St	age: F
Scoring	Guidelines	Juror:	PLESO	4	Signature:	<u>V</u>

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent *challenged* the *reporter's understanding* of the presented *concepts, theories* and *principles* • the opponent understood the *appropriate mathematics* presented • the opponent *critiqued* the *experimental technique* used and questioned the *validity* of the *data* • the opponent appreciated and highlighted the *strengths and weaknesses* of the report

A review should show that:

- the reviewer succeeded in giving an *objective summary* of the performances the *reporter* and *opponent* the reviewer appreciated the *important aspects* (especially the *controversial* ones) the reviewer's *personal opinion* was in evidence (*not* just *superficial observations*) such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's *understanding* of *concepts*, *theories*, *principles* and *appropriate mathematics* used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role.
- The reporter, opponent and reviewer each start with 5 points.

 Consider the following suggestions to a Select each partial grade from each sec 	add to or deduct from the initial 5 points. Ition and write it in the corresponding box. It o questions were posed or not finding shortco	omings if there were none to find.
Rep.: <u>\$200</u> 5	Opp.:	Rev.: 10T 5
Physics ±3	Physics ±3	Physics ±3
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	Overall impression	☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	☐ Shows the strong and weak points	☐ Expresses own opinion about
☐ Explanation of formulae and	of the report	topics presented or discussed
symbols Appropriate models, conformity	☐ Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
of dimensions	☐ Relevance of the questions	Draws attention to points missed by the reporter or the opponent
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		fight assistant, so we do a please archive your partial grades – please
Contribution to the discussion		do not bend

Final Grade: Opponent

Final Grade: Reviewer

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			A		9		M	M	Cano			C	J

Fight (Round no.): 5 Room:	Stage: Problem no.:
Juror: PHIL O'NEILL	Signature: 150 Mill

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent *challenged* the *reporter's understanding* of the presented *concepts, theories* and *principles* • the opponent understood the *appropriate mathematics* presented • the opponent *critiqued* the *experimental technique* used and questioned the *validity* of the *data* • the opponent appreciated and highlighted the *strengths and weaknesses* of the report

A review should show that:

Final Grade: Reporter

- the reviewer succeeded in giving an *objective summary* of the performances the *reporter* and *opponent* the reviewer appreciated the *important aspects* (especially the *controversial* ones) the reviewer's *personal opinion* was in evidence (*not* just *superficial observations*) such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's *understanding* of *concepts*, *theories*, *principles* and *appropriate mathematics* used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role.
- The reporter, opponent and reviewer each start with 5 points.

 Select each partial grade from each sec 	add to or deduct from the initial 5 points. ction and write it in the corresponding box. o questions were posed or not finding shortc	omings if there were none to find.
Rep.: SLOVENIA 5	Opp.: CHINA 5	Rev.: AUSTRIA 5
Physics ±3	Physics ±3	Physics ±3
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	☐ Overall impression	Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
F Structure	☐ Shows the strong and weak points	Expresses own opinion about
☐ Explanation of formulae and	of the report	topics presented or discussed
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
of dimensions	☐ Relevance of the questions	Draws attention to points missed by the reporter or the opponent
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
Novelty of the report		fight assistant, so we do archive your partial grades – please
Contribution to the discussion		do not bend

Final Grade: Opponent

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Fight (Round no.):	Room: E Stage: 2 Problem no.: 7
Juror: VE YEO	Signature:
and principles of the problem	• an explanation of the observed phenomena • an

• a presentation of the appropriate concepts, theories application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

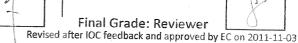
An opposition should show that:

• the opponent challenged the reporter's understanding of the presented concepts, theories and principles • the opponent understood the appropriate mathematics presented • the opponent critiqued the experimental technique used and questioned the validity of the data • the opponent appreciated and highlighted the strengths and weaknesses of the report

A review should show that:

• the reviewer succeeded in giving an objective summary of the performances the reporter and opponent • the reviewer appreciated the important aspects (especially the controversial ones) • the reviewer's personal opinion was in evidence (not just superficial observations) • such personal opinions were informative, non-trivial and demonstrated, where possible, the reviewer's understanding of concepts, theories, principles and appropriate mathematics used by the reporter and the opponent

 The reporter, opponent and reviewer e Consider the following suggestions to e Select each partial grade from each sec 	consists of a partial grade for <i>physics, present</i> each start with 5 points. add to or deduct from the initial 5 points. ation and write it in the corresponding box. o questions were posed or not finding shortco					
Rep.:5	Opp.: 5	Rev.: 5				
Physics ±3	Physics ±3	Physics ±3				
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics				
Scientific approach	☐ Scientific approach	☐ Scientific approach				
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions				
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers				
Presentation ±1	Presentation ±1	Presentation ±1				
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable				
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner				
U Overall impression	Overall impression	☐ Overall impression				
Reporter ±1	Opponent ±1	Reviewer ±1				
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion				
☐ Structure	☐ Shows the strong and weak points					
☐ Explanation of formulae and	of the report	Expresses own opinion about topics presented or discussed				
symbols Appropriate models, conformity of dimensions	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent				
of dimensions	Relevance of the questions	☐ Draws attention to points missed				
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent				
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and				
☐ Novelty of the report		fight assistant, so the relation of the second archive your partial grades – please				
Contribution to the discussion		do not bend				
Final Grade: Reporter	Final Grade: Opponent	Final Crades Basis				



Final Grade: Reviewer



Scoring Guidelines

Stage: \$

Final Grade: Reviewer Revised after IOC feedback and approved by EC on 2011-11-03

A report should include:

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent challenged the reporter's understanding of the presented concepts, theories and principles • the opponent understood the appropriate mathematics presented • the opponent critiqued the experimental technique used and questioned the validity of the data • the opponent appreciated and highlighted the strengths and weaknesses of the report

A review should show that:

Final Grade: Reporter

- the reviewer succeeded in giving an objective summary of the performances the reporter and opponent the reviewer appreciated the important aspects (especially the controversial ones) • the reviewer's personal opinion was in evidence (not just superficial observations) • such personal opinions were informative, non-trivial and demonstrated, where possible, the reviewer's understanding of concepts, theories, principles and appropriate mathematics used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for physics, presentation and for their specific role.
- The reporter, opponent and reviewer each start with 5 points.
- Consider the following suggestions to add to or deduct from the initial 5 points.
- Select each partial grade from each section and write it in the corresponding box.

Pour change missing auswers when the							
Rep.:5	Opp.: 5	Rev.: 5					
Physics ±3 — 2 + 4	Physics ±3	Physics ±3					
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics					
Scientific approach	☐ Scientific approach	Scientific approach					
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions					
Accurate answers	Accurate answers	☐ Accurate answers					
Presentation ±1	Presentation ±1	Presentation ±1					
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable					
Appropriate manner	☐ Appropriate manner	☐ Appropriate manner — —					
Overall impression	Overall impression	Overall impression					
Reporter ±1	Opponent ±1	Reviewer ±1					
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion					
☐ Structure	☐ Shows the strong and weak points						
generally .		LI Expresses own opinion about					
☐ Explanation of formulae and	of the report	Li Expresses own opinion about topics presented or discussed					
symbols	of the report Finds shortcomings or errors in the report	Expresses own opinion about topics presented or discussed Relevance of questions to both the reporter and the opponent					
Explanation of formulae and symbolsAppropriate models, conformity of dimensions	of the report Finds shortcomings or errors in	topics presented or discussed Relevance of questions to both the reporter and the opponent					
symbols Appropriate models, conformity	of the report Finds shortcomings or errors in the report	topics presented or discussed Relevance of questions to both the					
symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio.	of the report Finds shortcomings or errors in the report Relevance of the questions	topics presented or discussed ☐ Relevance of questions to both the reporter and the opponent ☐ Draws attention to points missed by the reporter or the opponent This sheet will be collected by the					
symbols Appropriate models, conformity of dimensions Slides, on-site experiments, audio, video, as appropriate	of the report Finds shortcomings or errors in the report Relevance of the questions	topics presented or discussed ☐ Relevance of questions to both the reporter and the opponent ☐ Draws attention to points missed by the reporter or the opponent This sheet will be collected by the					
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Scoring	Guidelines	
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Final Grade: Reporter

Scaring Cuidali	Fight (Round no.): Roor	n: 2 Stage: 2 Problem no.:					
Scoring Guideling	Juror: Harst 13: 14	v Signature: A					
A report should include:							
• a presentation of the appropriate concept application of appropriate mathematics • r	ets, theories and principles of the problem • an eleasonable experimental technique to gather and experimental findings to draw suitable conclusionable manner	record data (or demonstrate the phenomena if					
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the st	nderstanding of the presented concepts, theories pponent critiqued the experimental technique use	and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the					
A review should show that: • the reviewer succeeded in giving an object important aspects (especially the controver.)	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was in on-trivial and demonstrated, where possible, the re	n evidence (not just superficial observations) •					
 The reporter, opponent and reviewer Consider the following suggestions to Select each partial grade from each se 	consists of a partial grade for <i>physics, presen</i> each <i>start with 5 points</i> . add to or deduct from the initial <i>5 points</i> . ction and write it in the corresponding box. no questions were posed or not finding shortc						
Rep.: Slovenia 5	Opp.: China 5	Rev.: Hunteria 5					
Physics ±3	Physics ±3	Physics ±3					
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics					
☐ Scientific approach ☐ Validity of conclusions	Scientific approach	Scientific approach					
☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers	☐ Validity of conclusions ☐ Accurate answers					
	Dragontation 14	Accurate answers					
Presentation ±1	Presentation ±1	Presentation ±1					
Clear and understandable	☐ Clear and understandable	☐ Clear and understandable					
☐ Appropriate manner☐ Overall impression	☐ Overall impression	☐ Appropriate manner					
Coveral impression	☐ Overall impression	U Overall impression					
Reporter ±1	Opponent ±1	Reviewer ±1 \bigcirc					
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion					
☐ Structure	☐ Shows the strong and weak points	☐ Expresses own opinion about					
Explanation of formulae and symbols	of the report Finds shortcomings or errors in	topics presented or discussed Relevance of questions to both the					
Appropriate models, conformity	the report	reporter and the opponent					
of dimensions Slides, on-site experiments, audio, video, as appropriate	☐ Relevance of the questions ☐ Contribution to the discussion	Draws attention to points missed by the reporter or the opponent					
References, proper citations of ideas and input of others		This sheet will be collected by the					
☐ Novelty of the report		This sheet will be to the fight assistant, so we can scan it and fight assistant, so we can scan it and fight assistant, so we can scan it and					

☐ Novelty of the archive yo do not bend ☐ Contribution to the discussion

Final Grade: Opponent

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						Standard .										

Fight (Round no.): Room:	E Stage: 2 Problem no.:
Juror: Daniela Tvanova	Signature:

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

An opposition should show that:

• the opponent *challenged* the *reporter's understanding* of the presented *concepts, theories* and *principles* • the opponent understood the *appropriate mathematics* presented • the opponent *critiqued* the *experimental technique* used and questioned the *validity* of the *data* • the opponent appreciated and highlighted the *strengths and weaknesses* of the report

A review should show that:

Final Grade: Reporter

- the reviewer succeeded in giving an *objective summary* of the performances the *reporter* and *opponent* the reviewer appreciated the *important aspects* (especially the *controversial* ones) the reviewer's *personal opinion* was in evidence (*not* just *superficial observations*) such personal opinions were *informative*, *non-trivial* and demonstrated, where possible, the reviewer's *understanding* of *concepts*, *theories*, *principles* and *appropriate mathematics* used by the reporter and the opponent
- The grade for each of the three teams consists of a partial grade for *physics*, *presentation* and for their *specific role*.
- The reporter, opponent and reviewer each start with 5 points

 Select each partial grade from each sec 	add to or deduct from the initial 5 points. tion and write it in the corresponding box. o questions were posed or not finding shortco	omings if there were none to find.					
Rep.: Sovenia 5	Opp.: Mina 5	Rev.: Austria 5					
Physics ±3	Physics ±3	Physics ±3					
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics					
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach					
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions					
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers					
Presentation ±1	Presentation ±1 +	Presentation ±1					
Clear and understandable	Clear and understandable	Clear and understandable					
Appropriate manner	☐ Appropriate manner	☐ Appropriate manner					
Overall impression	Overall impression	Overall impression					
Reporter ±1 —/	Opponent ±1	Reviewer ±1					
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion					
☐ Structure	Shows the strong and weak points	Expresses own opinion about					
☐ Explanation of formulae and	of the report	topics presented or discussed					
symbols	☐ Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent					
Appropriate models, conformity of dimensions	Relevance of the questions	☐ Draws attention to points missed					
☐ Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent					
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and					
☐ Novelty of the report		archive your partial grades					
☐ Contribution to the discussion		do not bend					
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Final Grade: Opponent

Final Grade: Reviewer
Revised after IOC feedback and approved by EC on 2011-11-03

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		Fight (Round no.): Room:	: <u> </u>
Scoring	Guidelines	Juror: RESCH	Signature:
			Jigilatai C.

Fight (Round no.): Room:	Stage:	S Prob	olem no.: <u>- ′/> </u>
Juror: PESCH	Signature:	J-	

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

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 Select each partial grade from each sec 	add to or deduct from the initial 5 points. tion and write it in the corresponding box. o questions were posed or not finding shortco	omings if there were none to find.
Rep.:	Opp.:	Rev.: 5 5
Physics ±3	Physics ±3	Physics ±3
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
☐ Overall impression	Overall impression	☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	☐ Shows the strong and weak points	☐ Expresses own opinion about
☐ Explanation of formulae and	of the report	topics presented or discussed
symbols Appropriate models, conformity	☐ Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
of dimensions	☐ Relevance of the questions	☐ Praws attention to points missed
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
□ Novelty of the report		archive your partial grades
Contribution to the discussion		do not bend

Final Grade: Reporter Final Grade: Opponent

Final Grade: Reviewer

Crorina	Guidelines	Fight (Round no.)): Room:	
Juling	Guiueilles	Juror: PHIC	O'NEKC	Sig

-ignt (Kouna no.):	Room:		rtage:		Problem no.:	1
					1	1.	
uror:	PHIC	O'NEKC	Signature:		702 <u>,</u>	Mall	-

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

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	ction and write it in the corresponding box. To questions were posed or not finding shortco	omings if there were none to find.
Rep.: <u>CHINA</u> 5	Opp.: <u>A USTRIA</u> 5	Rev.: SLOVENIA 5
Physics ±3	Physics ±3	Physics ±3
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner
Overall impression	☐ Overall impression	☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ± 1 V_2
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	☐ Shows the strong and weak points	Expresses own opinion about
☐ Explanation of formulae and	of the report	topics presented or discussed
symbols	Finds shortcomings or errors in the report	Relevance of questions to both the
Appropriate models, conformity of dimensions	Relevance of the questions	reporter and the opponent
Slides, on-site experiments, audio, video, as appropriate	Contribution to the discussion	☐ Draws attention to points missed by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
\square Novelty of the report		fight assistant, so we com- archive your partial grades – please
☐ Contribution to the discussion		do not bend

Final Grade: Opponent Final Grade: Reporter

Final Grade: Reviewer

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Fight (Round no.): Ro	om: <u>£</u> Stage: _	$\frac{\mathcal{J}}{\mathcal{J}}$ Problem no.: $\frac{\sqrt{\mathcal{J}}}{\mathcal{J}}$
Juror: YE YEO	Signature:	Hart

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

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 Select each partial grade from each sec 	each start with 5 points. add to or deduct from the initial 5 points. ction and write it in the corresponding box. o questions were posed or not finding shortco	omings if there were none to find.				
Rep.:5	Opp.:5	Rev.: 5				
Physics ±3	Physics ±3	Physics ±3				
☐ Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics				
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach				
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions				
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers				
Presentation ±1	Presentation ±1	Presentation ±1				
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable				
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner				
Overall impression	Overall impression	☐ Overall impression				
Reporter ±1	Opponent ±1	Reviewer ±1				
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion				
☐ Structure	☐ Shows the strong and weak points	☐ Expresses own opinion about				
☐ Explanation of formulae and	of the report	topics presented or discussed				
symbols Appropriate models, conformity of dimensions	☐ Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent				
of dimensions	☐ Relevance of the questions	Draws attention to points missed by the reporter or the opponent				
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion					
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and				
☐ Novelty of the report		fight assistant, so we are archive your partial grades — please				
Contribution to the discussion		do not bend				
Final Grade: Reporter	Final Grade: Opponent Revised a	Final Grade: Reviewer after IOC feedback and approved by EC on 2011-11-03				

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Fight (Round no.):	<u> </u>	_ Stage: <u>S</u>	_ Problem no.:	<u> 13</u>
Juror:	Sagged Signatu	re: <u> </u>	Call	

• a presentation of the appropriate concepts, theories and principles of the problem • an explanation of the observed phenomena • an application of appropriate mathematics • reasonable experimental technique to gather and record data (or demonstrate the phenomena if appropriate) • linking of theoretical and experimental findings to draw suitable conclusions • an attempt to communicate difficult or complex ideas in an effective and understandable manner

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- Consider the following *suggestions* to *add* to or *deduct* from the initial *5 points*.
- Select each partial grade from each section and write it in the corresponding box.
- Don't punish missing 'answers' when no questions were posed or not finding shortcomings if there were none to find.

	a questions were posed or not midnig shorte	onlings it there were none to find.
Rep.:	Opp.:	Rev.:
	5	5
Physics ±3	Physics ±3	Physics ±3
☐ Correct and relevant physics ±☐ Scientific approach	☐ Correct and relevant physics ☐ Scientific approach	☐ Correct and relevant physics ☐ Scientific approach
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers
Presentation ±1	Presentation ±1	Presentation ±1
☐ Clear and understandable ✓	☐ Clear and understandable	☐ Clear and understandable
☐ Appropriate manner ∨	☐ Appropriate manner	☐ Appropriate manner
Overall impression	Overall impression	☐ Overall impression
Reporter ±1	Opponent ±1	Reviewer ±1
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion
☐ Structure	☐ Shows the strong and weak points	
☐ Explanation of formulae and	of the report	Expresses own opinion about topics presented or discussed
symbols Appropriate models, conformity	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent
of dimensions	☐ Relevance of the questions	Draws attention to points missed by the reporter or the opponent
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and
☐ Novelty of the report		fight assistant, so we con- archive your partial grades — please
☐ Contribution to the discussion		do not bend
(Processing and Assessment Control of Contro		procedurance

Final Grade: Opponent

	Fight / Dound no le	Fight (Round no.): Room: Stage: Problem no.:						
Scoring Guideling	nes Juror: Harst Rither							
application of appropriate mathematics • r	easonable experimental technique to <i>gather</i> and experimental findings to draw suitable conclus.	explanation of the observed phenomena • an record data (or demonstrate the phenomena if ions • an attempt to communicate difficult or						
An opposition should show that: • the opponent challenged the reporter's unappropriate mathematics presented • the opponent appreciated and highlighted the st	nderstanding of the presented concepts, theories pponent critiqued the experimental technique us	s and <i>principles</i> • the opponent understood the ed and questioned the <i>validity</i> of the <i>data</i> • the						
important aspects (especially the controvers	ctive summary of the performances the reporter sial ones) • the reviewer's personal opinion was non-trivial and demonstrated, where possible, the d by the reporter and the opponent	in evidence (not just superficial observations) .						
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Rep.: Charage 5	Opp.: Austrice 5	Rev.: Slovenia 5						
Physics ±3	Physics ±3	Physics ±3						
☐ Correct and relevant physics	Correct and relevant physics	☐ Correct and relevant physics						
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach						
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions						
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers						
Presentation ±1	Presentation ±1	Presentation ±1						
Clear and understandable	Clear and understandable	☐ Clear and understandable						
☐ Appropriate manner	☐ Appropriate manner	Appropriate manner						
☐ Overall impression	☐ Overall impression	☐ Overall impression						
Reporter ±1	Opponent ±1	Reviewer ±1						
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Appropriate models, conformity of dimensions	the report Relevance of the questions	reporter and the opponent Draws attention to points missed						
Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent						
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and						
☐ Novelty of the report		fight assistant, so we can see archive your partial grades – please						

Final Grade: Opponent

☐ Contribution to the discussion

Final Grade: Reporter

Final Grade: Reviewer

Revised after IOC feedback and approved by EC on 2011-11-03

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Fight (Round no.): 5 Room:	\underline{E} Stage: 3 / Problem no.: 13
Juror: Daniela Ivanava	Signature:

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Rep.: China 5	Opp.: Austria 5	Rev.: Stovenja 5				
Physics ±3	Physics ±3	Physics ±3				
Correct and relevant physics	☐ Correct and relevant physics	☐ Correct and relevant physics				
☐ Scientific approach	☐ Scientific approach	☐ Scientific approach				
☐ Validity of conclusions	☐ Validity of conclusions	☐ Validity of conclusions				
☐ Accurate answers	☐ Accurate answers	☐ Accurate answers				
Presentation ±1	Presentation ±1	Presentation ±1				
☐ Clear and understandable	☐ Clear and understandable	☐ Clear and understandable				
☐ Appropriate manner	☐ Appropriate manner	☐ Appropriate manner				
Overall impression	Overall impression	☐ Overall impression				
Reporter ±1	Opponent ±1	Reviewer ±1				
Quality of experimental technique(s)	Response to the reporter's solution	Provides a thorough review of report and discussion				
☐ Structure	Shows the strong and weak points	☐ Expresses own opinion about				
☐ Explanation of formulae and	of the report	topics presented or discussed				
symbols	Finds shortcomings or errors in the report	Relevance of questions to both the reporter and the opponent				
Appropriate models, conformity of dimensions	☐ Relevance of the questions	☐ Praws attention to points missed				
☐ Slides, on-site experiments, audio, video, as appropriate	☐ Contribution to the discussion	by the reporter or the opponent				
References, proper citations of ideas and input of others		This sheet will be collected by the fight assistant, so we can scan it and				
☐ Novelty of the report		fight assistant, so we con- archive your partial grades – please				
Contribution to the discussion		do not bend				
2						

Final Grade: Reporter

