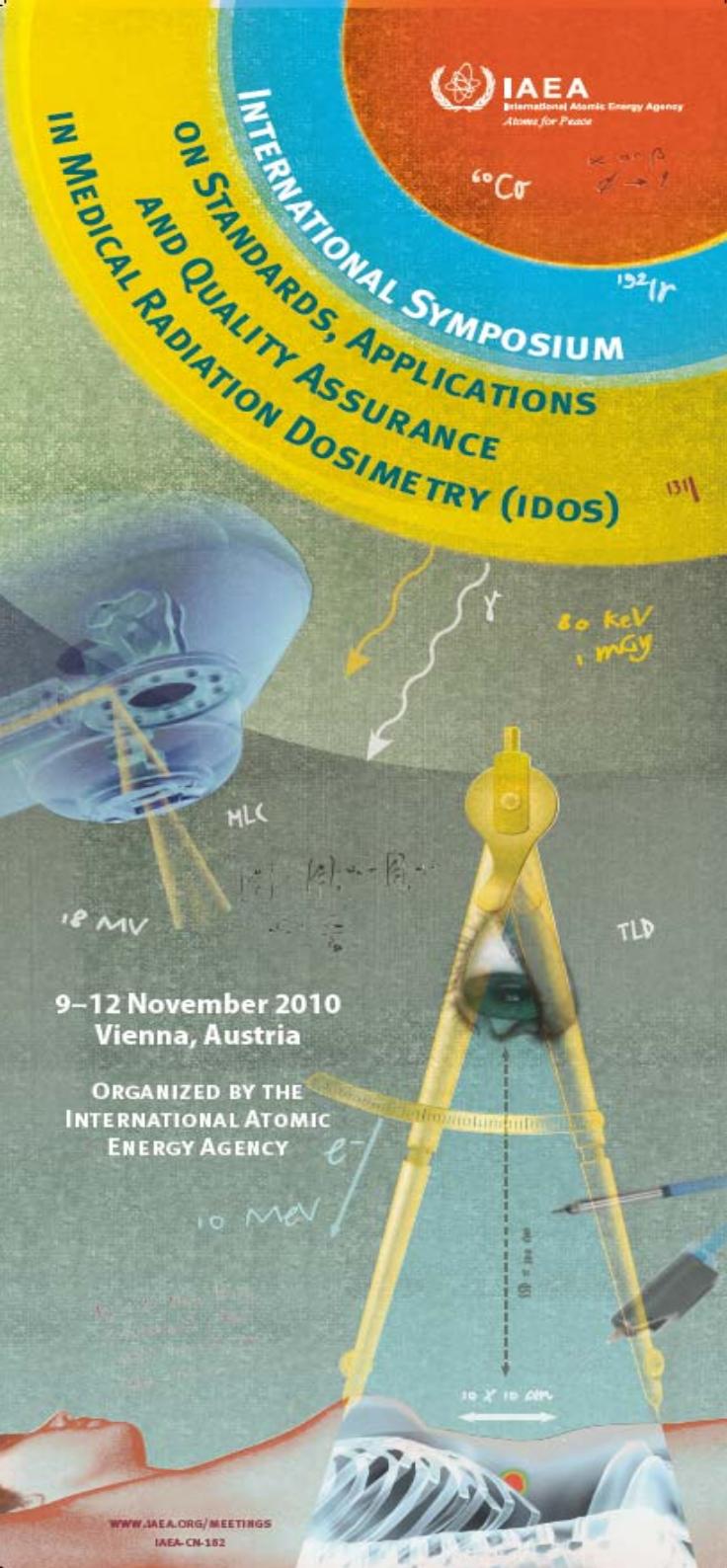


TUESDAY, 09 NOVEMBER 2010

09:30 – 10:30 OPENING SESSION:

Room: Conference Room M1  
Press Room (via CCTV)

No. of Paper IAEA-CN-182-	Name	Designating Member State/Organization	Title of Paper
	M. Dondi	IAEA	Opening Address
	D. Magliani	IAEA	Opening Address
	P.J. Allisy-Roberts	BIPM	Opening Address
	D. Jones	ICRU	Opening Address
INV001	P. Andreo	Sweden	Accuracy requirements in medical radiation dosimetry



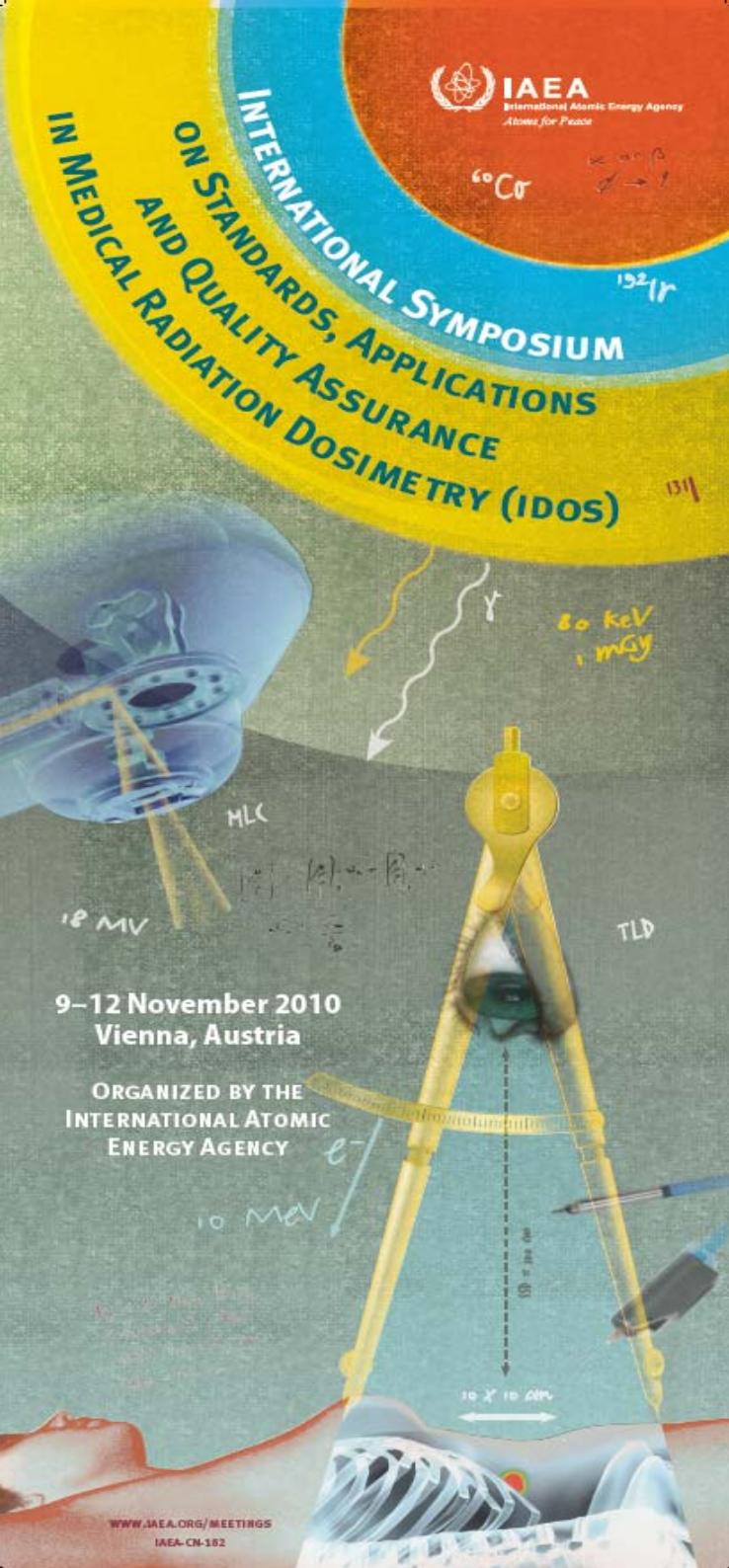
TUESDAY, 09 NOVEMBER 2010

11:00–12:30 PLENARY SESSION 1:  
Radiation Measurement Standards for  
Imaging and Therapy I

Room: Conference Room M1  
Press Room (via CCTV)

Chair: P. J. Allisy-Roberts, BIPM  
Co-chair: A. Meghzifene, IAEA

No. of Paper IAEA-CN-182-	Name	Designating Member State/Organization	Title of Paper
INV002	<b>H.M. Kramer</b>	Germany	What can primary standards do for you?
148	<b>A. Sarfehnia</b> K. Stewart C. Ross M. McEwen et al.	Canada	Primary water calorimetry for clinical electron beams, scanned proton beams and <sup>192</sup> Ir brachytherapy
253	<b>A. Steurer</b> A. Baumgartner R.P. Kapsch G. Stucki	Austria	Results of the direct comparison of primary standards for absorbed dose to water in <sup>60</sup> Co and high energy photon beams (EURAMET TC-IR Project 1021)
008	<b>B. Rapp</b> A. Ostrowsky J. Daures	France	The LNE–LNHB water calorimeter: Measurements in a <sup>60</sup> Co beam
057	<b>D.T. Burns</b>	BIPM	Dose conversion for the BIPM graphite calorimeter standard for absorbed dose to water



## TUESDAY, 09 NOVEMBER 2010

14:00 – 15:00     **ROUND TABLE DISCUSSION 1:**  
When Dosimetry Goes Wrong In Therapy  
and Imaging

Room:     Conference Room M1  
Press Room (via CCTV)

Chair:     G. Ibbott, AAPM

Panel Members: J. Izewska, IAEA  
P. Ortiz López, IAEA  
O. Holmberg, IAEA  
K. Faulkner, EFOMP  
T. Knöös, ESTRO

15:00 – 15:30     **POSTER HIGHLIGHTS 1**  
**(PARALLEL SESSION):**  
Clinical Dosimetry in X ray Imaging

Room:     Press Room

Chair:     C. Hourdakis, Greece

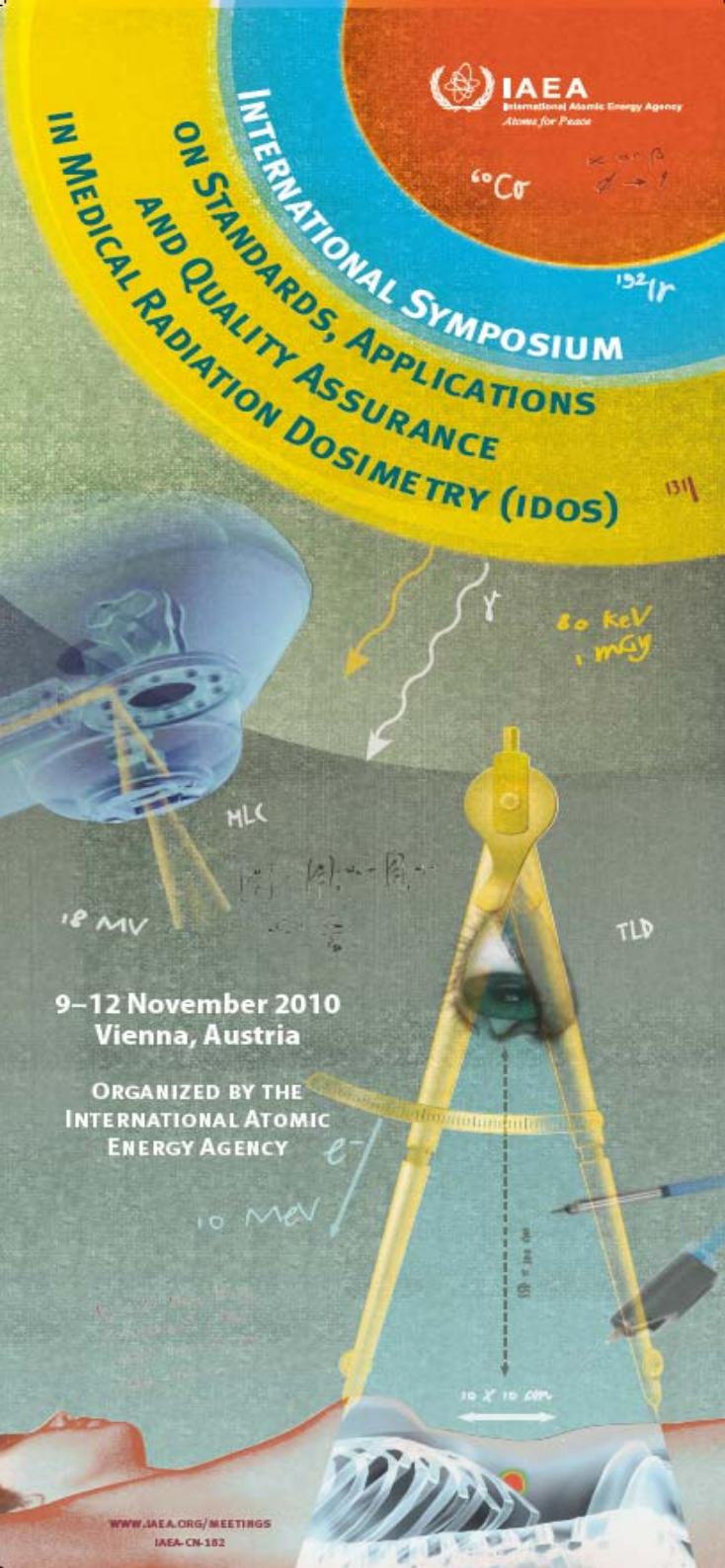
Co-chair: P. Toroi, Finland

15:00 – 15:30     **POSTER HIGHLIGHTS 2:**  
**(PARALLEL SESSION)**  
Radiation Measurement Standards for  
Imaging and Therapy / Reference  
Dosimetry and Comparisons  
in External Beam Radiotherapy

Room:     Conference Room M1

Chair:     D.T. Burns, BIPM

Co-chair: J. Seuntjens, AAPM



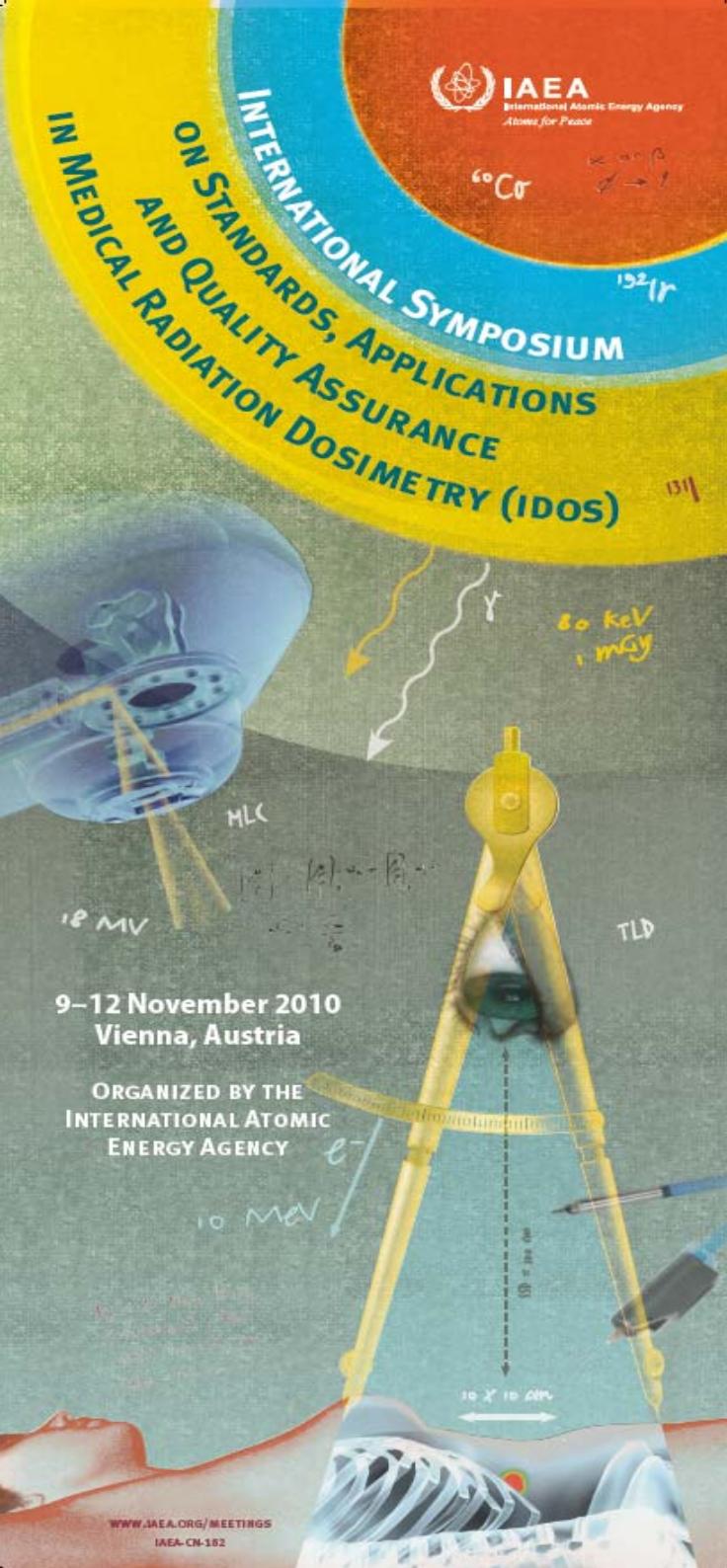
## TUESDAY, 09 NOVEMBER 2010

16:00 – 17:30 PLENARY SESSION 2:  
Radiation Measurement Standards  
for Imaging and Therapy II

Room: Conference Room M1  
Press Room (via CCTV)

Chair: H.M. Kramer, Germany  
Co-chair: K. Rosser, United Kingdom

No of Paper IAEA-CN-182-	Name	Designating Member State/Organization	Title of Paper
INV003	<b>P.J. Allisy-Roberts</b>	BIPM	What colour is 'your gray'?
209	<b>T. Sander</b> H. Palmans S. Duane M. Bailey et al.	United Kingdom	Design and principles of a graphite calorimeter for brachytherapy
129	<b>I. Aubineau-Laniec</b> P. Aviles-Lucas J. Bordy B. Chauvenet et al.	France	Development of a primary standard in terms of absorbed dose to water for <sup>125</sup> I brachytherapy seeds
207	<b>A. Malusek</b> G. Alm Carlsson	Sweden	Analysis of the tandem calibration method for kerma-area product meters via Monte Carlo simulations
117	<b>C.D. Cojocaru</b> G. Stucki M.R. McEwen C.K. Ross	Canada	Determination of absorbed dose to water in megavoltage electron beams using a calorimeter-Fricke hybrid system



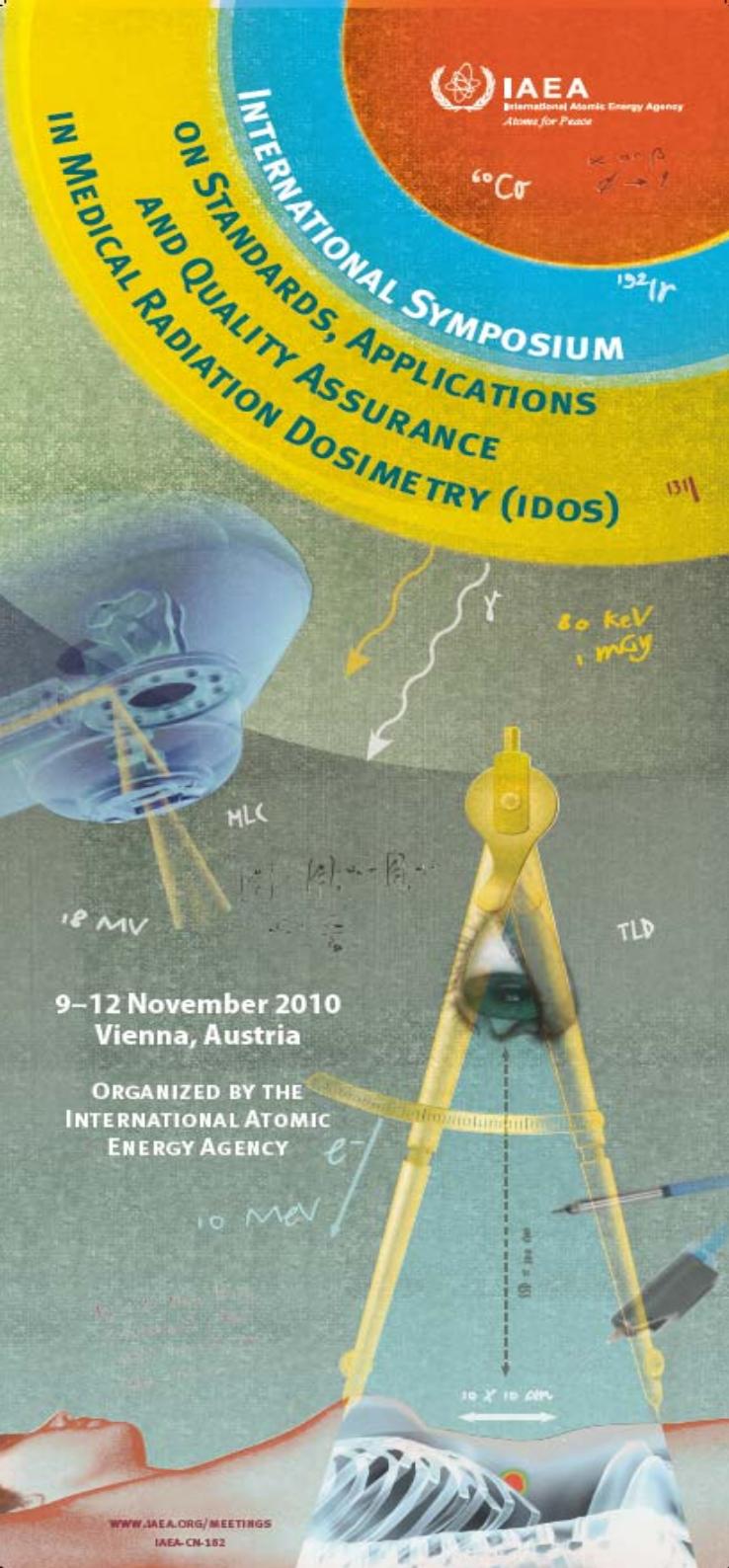
WEDNESDAY, 10 NOVEMBER 2010

08:00 – 08:50 COURSE 1:  
Formalism for Internal Dosimetry

Room: Press Room

Lecturer: G. Sgouros, SNM

(REGISTERED PARTICIPANTS ONLY)



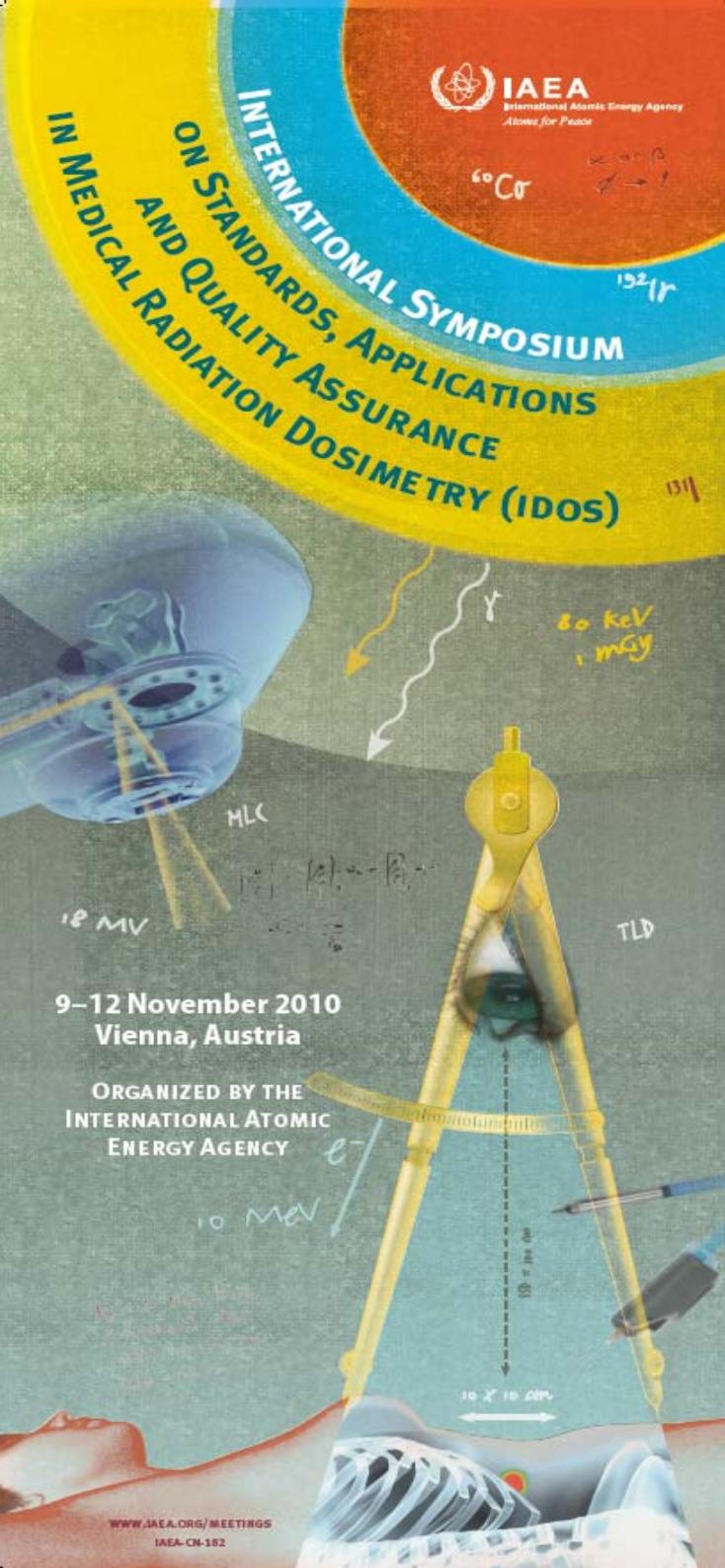
## WEDNESDAY, 10 NOVEMBER 2010

09:00 – 10:30 PARALLEL SESSION 3a:  
Reference Dosimetry and Comparisons  
in External Beam Radiotherapy I

Room: Conference Room M1

Chair: S. Huq, AAPM  
Co-chair: H. Palmans, United Kingdom

No of Paper IAEA-CN-182-	Name	Designating Member State/Organization	Title of Paper
INV004	<b>P. Andreo</b> H. Benmakkhoul	Sweden	Ten years after: impact of recent research in photon and electron beam dosimetry on TRS-398
063	<b>R.P. Kapsch</b> I. Gomola	Germany	Beam quality correction factors for plane parallel chambers in photon beams
149	<b>M.R. McEwen</b> L. DeWerd G. Ibbott D. Rogers et al.	Canada	Updating the AAPM's TG-51 protocol for clinical reference dosimetry of high energy photon beams
285	<b>K.E. Rosser</b> E. Fernandez	United Kingdom	Application of a new dosimetry formalism to IMRT head and neck radiotherapy
310	<b>M. Aspradakis</b> J.P. Byrne H. Palmans J. Conway et al.	IPEM	IPEM report 103: Small field MV photon dosimetry



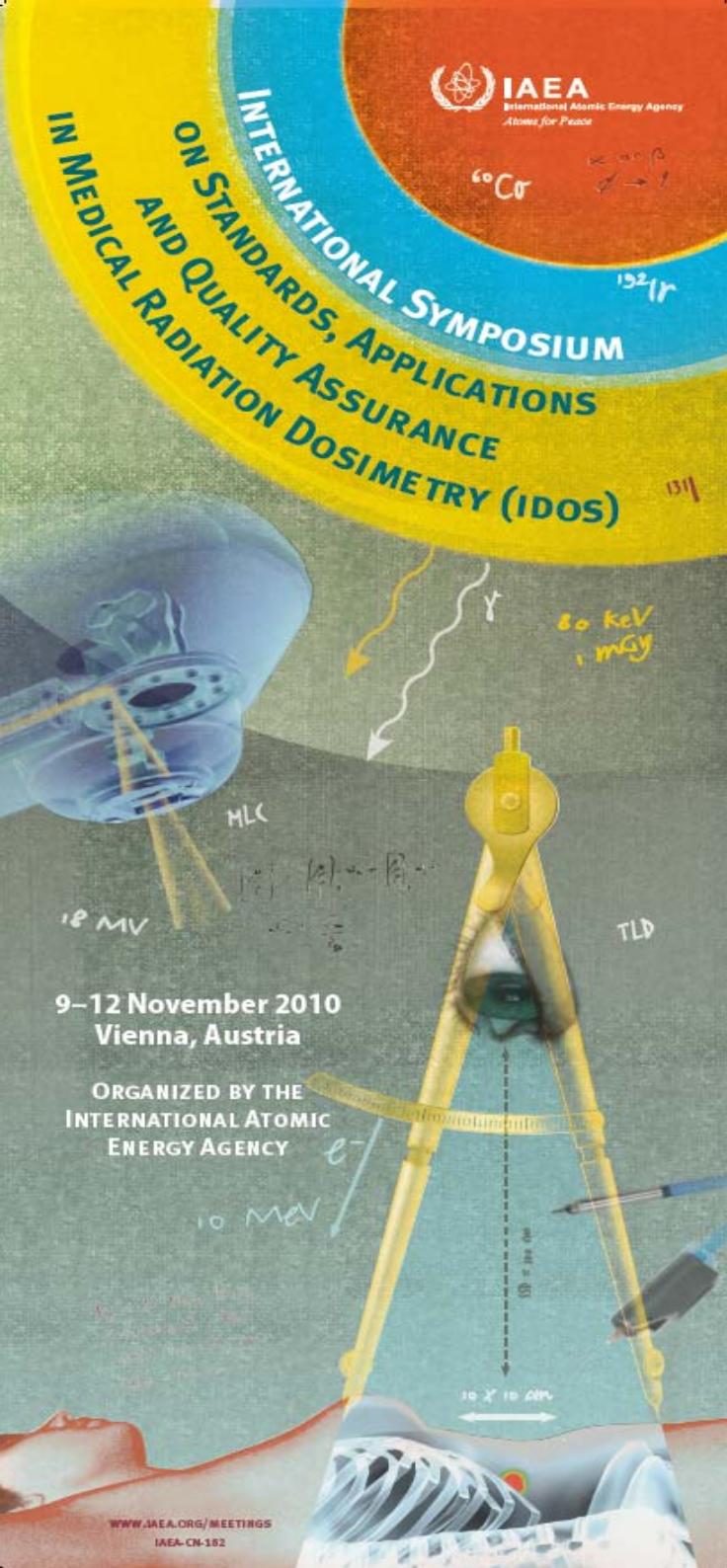
## WEDNESDAY, 10 NOVEMBER 2010

09:00 – 10:30 PARALLEL SESSION 3b:  
Internal Dosimetry: Computational  
Phantoms and Radiobiological Modelling

Room: Press Room

Chair: M. Ljungberg, Sweden  
Co-chair: G. Sgouros, SNM

No of Paper IAEA-CN-182-	Name	Designating Member State/Organization	Title of Paper
INV005	<b>W. Bolch</b> M. Wayson D. Pafundi	ICRP	Computational phantoms and skeletal dose models for adult and paediatric internal dosimetry
134	<b>M. Wayson</b> W. Bolch	United States of America	Photon and electron specific absorbed fractions for the University of Florida paediatric hybrid computational phantoms
167	<b>J. González González</b> C. Calderón R. Alfonso La Guardia O. Diaz Rizo et al.	Cuba	Inverse treatment planning for targeted radionuclide therapy
349	<b>C. Calderón</b> J. González González R. Alfonso La Guardia W. Quesada et al.	Cuba	Validating activity prescription schemes in radionuclide therapy based on TCP and NTCP indexes calculation
227	<b>B.W. Wessels</b> Y. Zheng A.G. Di Dia M. Cremonesi	United States of America	Isoeffective dose specification of normal liver during radioembolization using <sup>90</sup> Y microspheres



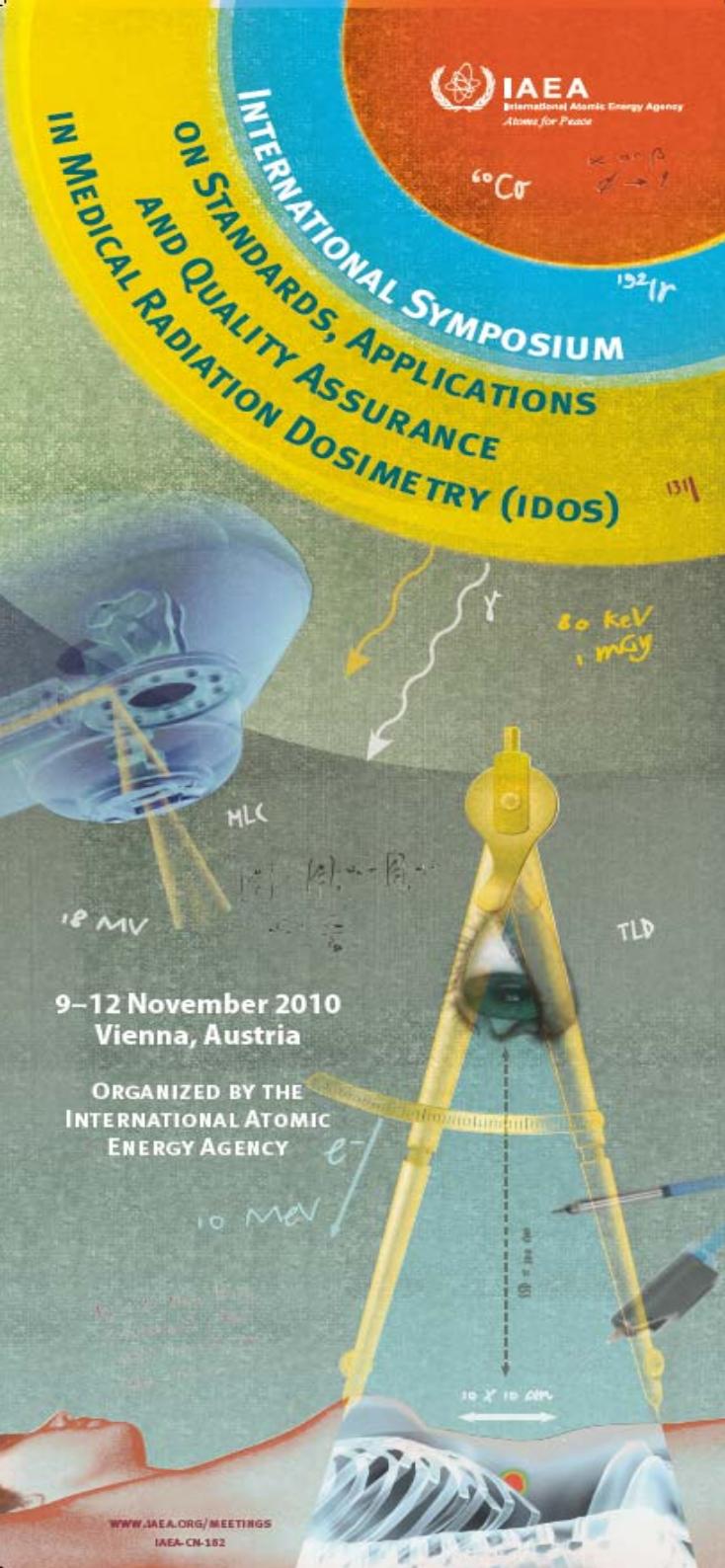
## WEDNESDAY, 10 NOVEMBER 2010

11:00 – 12:30 PARALLEL SESSION 4a:  
Small and Non-Standard Fields

Room: Conference Room M1

Chair: P. Andreo, Sweden  
Co-chair: J. Seuntjens, AAPM

No of Paper IAEA-CN-182-	Name	Designating Member State/Organization	Title of Paper
INV006	<b>H. Palmans</b>	United Kingdom	Small and composite field dosimetry: The problems and recent progress
012	<b>E. Pantelis</b> W. Kilby A. Moutsatsos K. Zourari et al.	Greece	On the implementation of a recently proposed dosimetric formalism to a robotic radiosurgery system
200	<b>S. Junell</b> L. DeWerd M.S. Huq J. Novotny et al.	AAPM	Small field dosimetric measurements with TLD-100, alanine and ionization chambers
217	<b>M.C. Pressello</b> C. De Angelis R. Rauco D. Aragno et al.	EFOMP	Application of a new formalism for dose determination in tomotherapy HiArt
146	<b>E. Chung</b> E. Soisson H. Bouchard J. Seuntjens	Canada	Advanced dosimetry techniques for accurate verification of non-standard beams



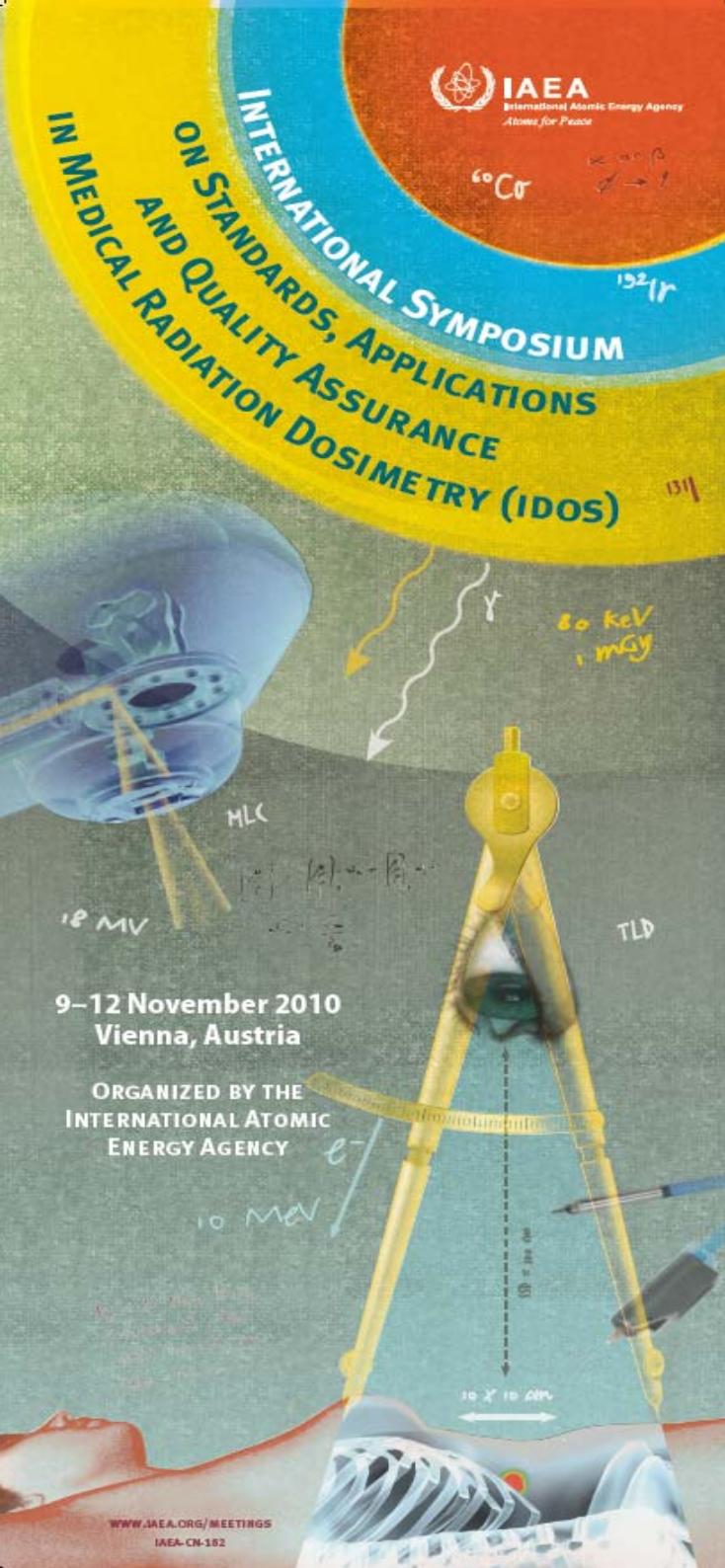
## WEDNESDAY, 10 NOVEMBER 2010

11:00 – 12:30 PARALLEL SESSION 4b:  
Internal Dosimetry: Patient Specific  
Methods

Room: Press Room

Chair: W. Bolch, ICRP  
Co-chair: S. Palm, IAEA

No of Paper IAEA-CN-182-	Name	Designating Member State/Organization	Title of Paper
INV007	<b>M. Ljungberg</b> K. Sjögren-Gleisner	Sweden	Imaging based patient specific dosimetry
034	<b>M. Lassmann</b> C. Chiesa M. Bardies	Germany	Good practice of clinical dosimetry reporting
300	<b>A.M. Fadel</b> R.C. Cabrejas G.C. Chebel M.L. Cabrejas	Argentina	Pitfalls in patient specific dosimetry
192	<b>A. Desbrée</b> L. Hadid N. Grandgirard N. Pierrat et al.	France	Towards patient specific dosimetry in nuclear medicine: Associating Monte Carlo and 3-D voxel based approaches
360	<b>G. Sgouros</b> R.F. Hobbs R.L. Wahl P.W. Ladenson	SNM	Clinical implementation of patient specific dosimetry: Comparison with absorbed fraction based methods



## WEDNESDAY, 10 NOVEMBER 2010

14:00 – 15:00     ROUND TABLE DISCUSSION 2:  
Dosimetry Challenges Associated with  
New Technology

Room:     Conference Room M1  
Press Room (via CCTV)

Chair:     S. Huq, AAPM

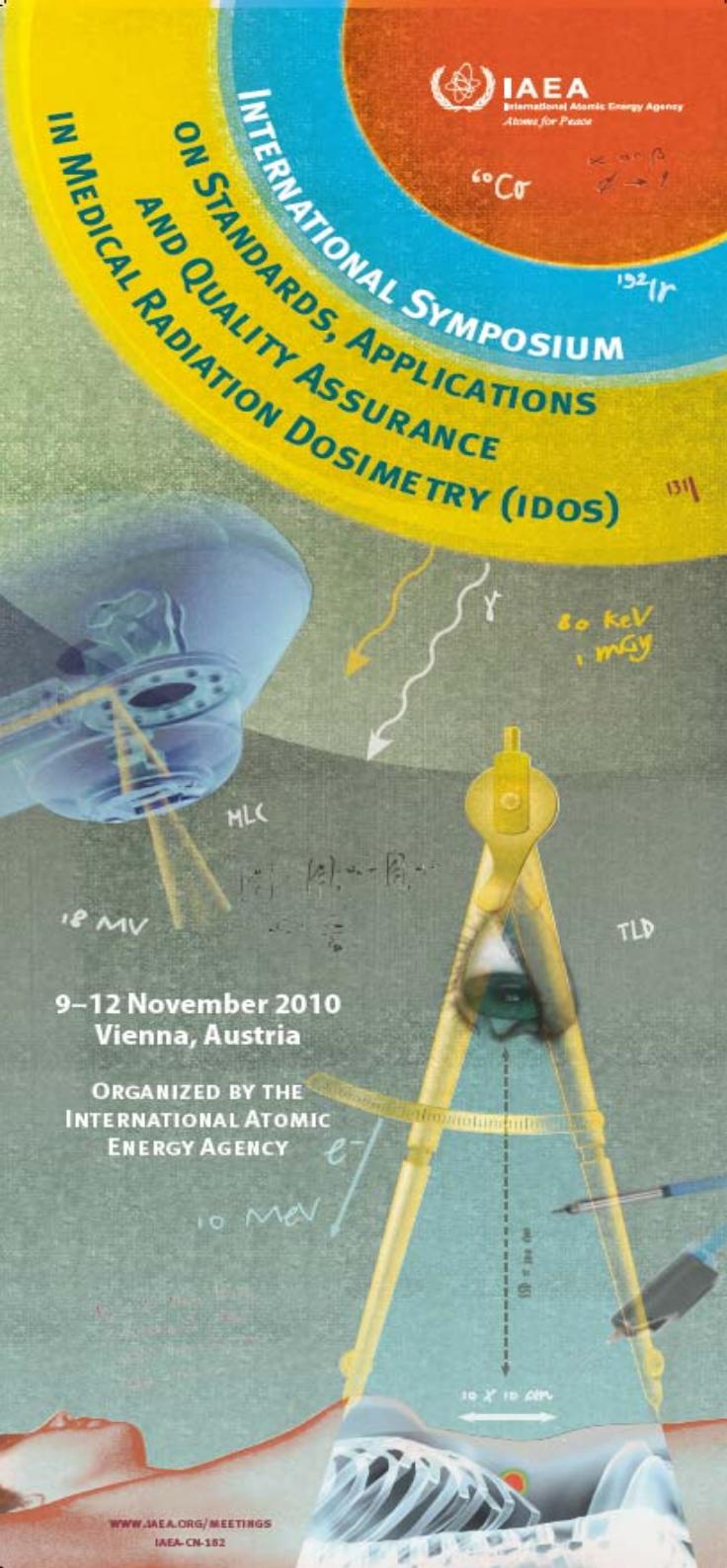
Panel Members     J. Van Dyk, IAEA  
G. Sgouros , SNM  
J. Seuntjens , AAPM  
D. Followill, AAPM  
J. Boone, ICRU

15:00 – 15:30     POSTER HIGHLIGHTS 3:  
(PLENARY SESSION)  
External Quality Audits in Radiotherapy

Room:     Conference Room M1  
Press Room (via CCTV)

Chair:     D. Followill, AAPM

Co-chair:     D. Georg, IOMP



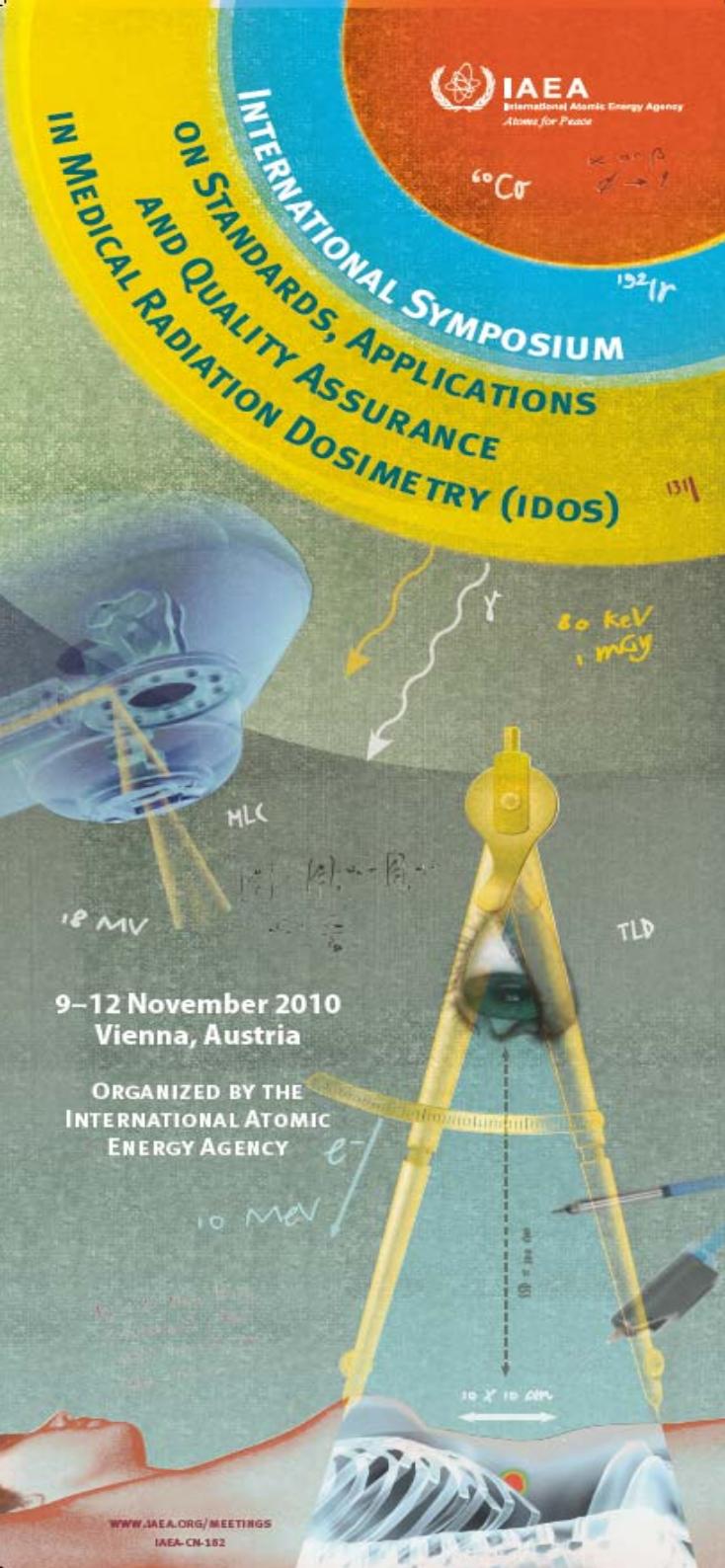
## WEDNESDAY, 10 NOVEMBER 2010

16:00 – 17:30 PLENARY SESSION 5:  
External Quality Audits in Radiotherapy

Room: Conference Room M1  
Press Room (via CCTV)

Chair: D. Thwaites, ESTRO  
Co-chair: J. Izewska, IAEA

No of Paper IAEA-CN-182-	Name	Designating Member State/Organization	Title of Paper
INV008	<b>J. Izewska</b> P. Bera G. Azangwe S. Vatnitsky et al.	IAEA	The IAEA quality audits for radiotherapy
INV009	<b>G. Ibbott</b>	AAPM	Credentialing institutions for advanced technology clinical trials
141	<b>J. Berresford</b> E. Bradshaw M. Trainer G. Budgell et al.	United Kingdom	A dosimetric audit of IMRT in the UK
326	<b>T. Knöös</b> J. Medin L. Persson	ESTRO	Preliminary results from a dosimetric audit performed at Swedish radiotherapy centres
135	<b>B. Schaecken</b> S. Lelie R. Cuypers W. Schroeyers et al.	Belgium	BELdART: Organization of a quality assurance audit for photon and electron beams based on alanine/EMR dosimetry
315	<b>H. Mizuno</b> A. Fukumura Y. Kusano S. Sakata	Japan	Dosimetry audits in radiotherapy using radiophotoluminescent glass dosimeters in Japan



THURSDAY, 11 NOVEMBER 2010

08:00 – 08:50 COURSE 2:  
Diagnostic Imaging: Clinical Dosimetry in  
Paediatric Imaging

Room: Press Room

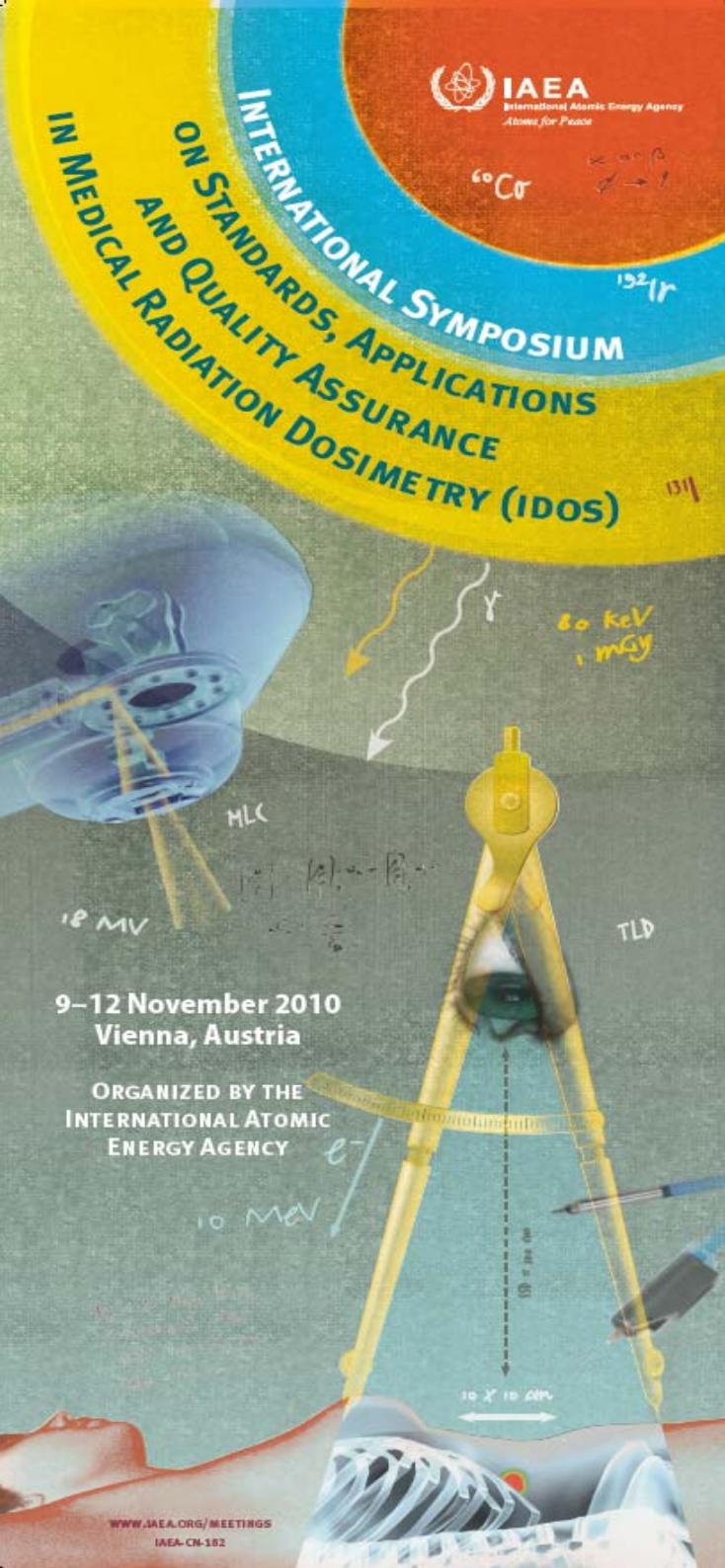
Moderator: A. Torresin, EFOMP

Lecturers: K. Faulkner, EFOMP

J. Boone, ICRU

W. Bolch, ICRP

(REGISTERED PARTICIPANTS ONLY)



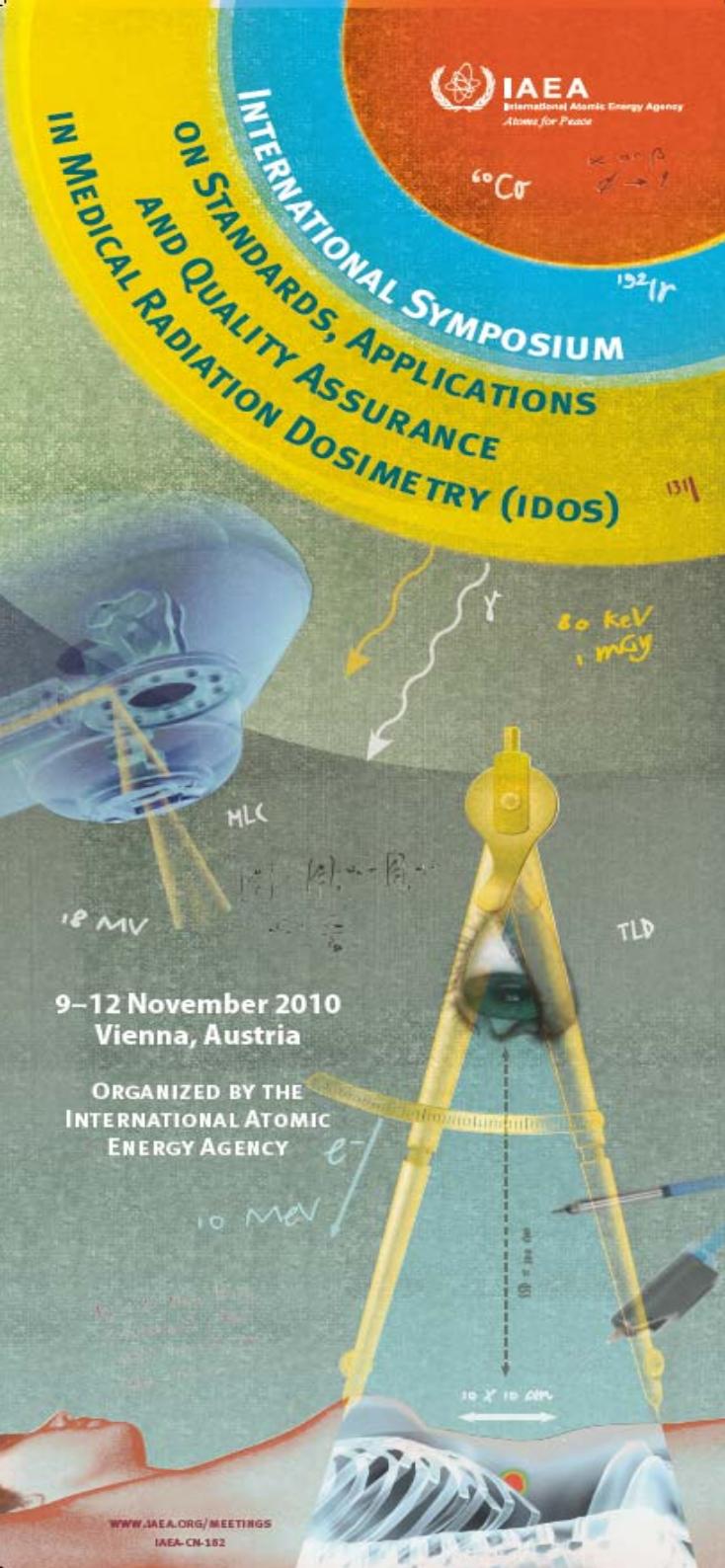
## THURSDAY, 11 NOVEMBER 2010

09:00 – 10:30 PARALLEL SESSION 6a:  
Reference Dosimetry and Comparisons  
in External Beam Radiotherapy II

Room: Conference Room M1

Chair: J. Medin, Sweden  
Co-chair: D. Jones, ICRU

No of Paper IAEA-CN-182-	Name	Designating Member State/Organization	Title of Paper
INV010	<b>S. Vatnitsky</b> P. Andreo D.T.L. Jones	Austria	Recent advances in dosimetry in reference conditions for proton and light-ion beams
325	<b>J. Medin</b>	Sweden	Experimental determination of the kQ factor for a Farmer chamber in a high energy scanned pulsed proton beam
061	<b>A. Krauss</b>	Germany	Calorimetric determination of kQ factors for an NE2561 ionization chamber in 3 cm x 3 cm beams of 6 MV and 10 MV photons
277	<b>H. Palmans</b> L. Al-Sulaiti R.A.S. Thomas D.R. Shipley et al.	United Kingdom	Conversion of dose-to-graphite to dose-to-water in clinical proton beams
268	<b>G. Kragl</b> S. af Wetterstedt B. Knäusl F. Baier et al.	Austria	Flattening filter free beams: Dosimetric characterization, beam quality and peripheral doses



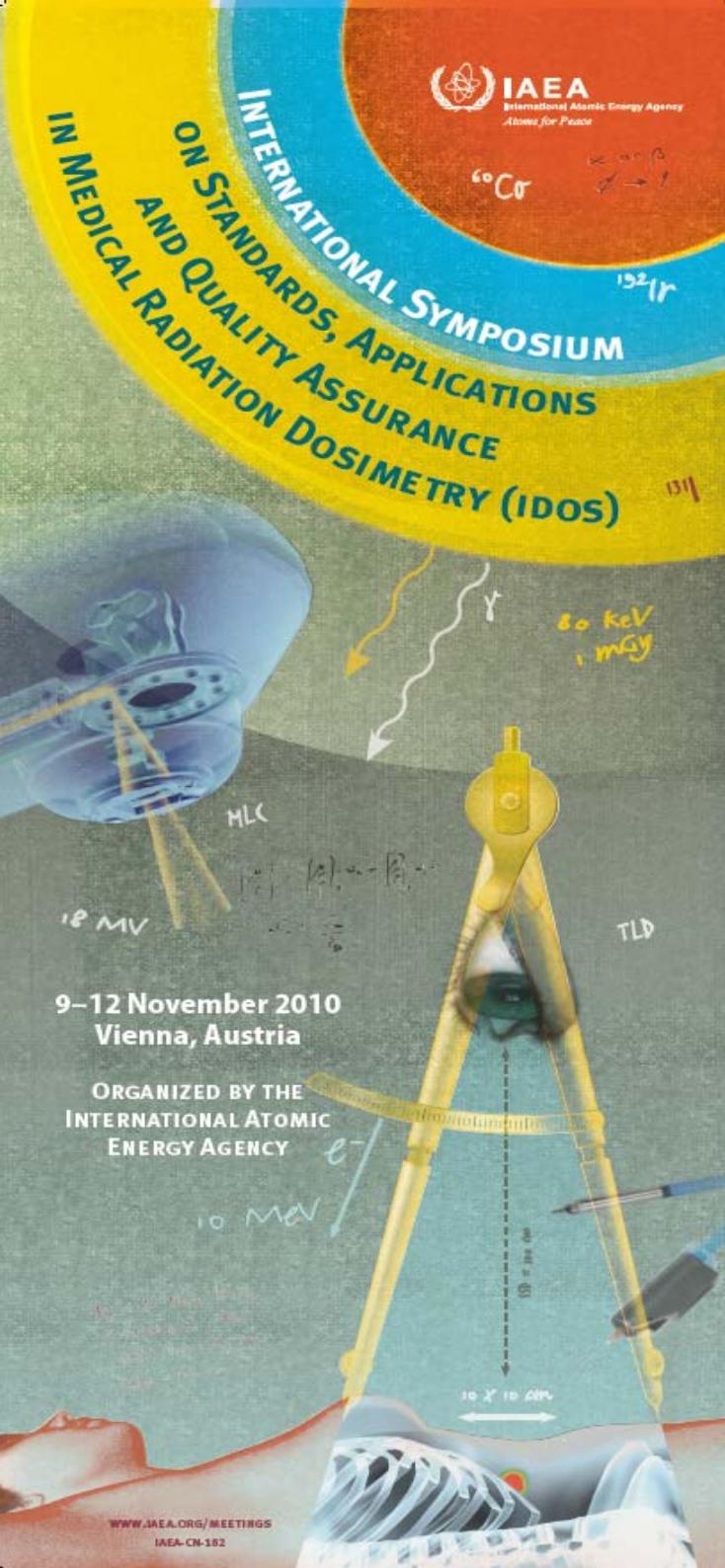
THURSDAY, 11 NOVEMBER 2010

09:00 – 10:30 PARALLEL SESSION 6b:  
Clinical Dosimetry in X ray Imaging I

Room: Press Room

Chairs: A. Torresin, EFOMP  
Co-chair: D. Dance, EFOMP

No of Paper IAEA-CN-182-	Name	Designating Member State/Organization	Title of Paper
INV011	J. Boone	ICRU	New advances in CT dosimetry
003	R.S. Livingstone P.M. Dinakaran	India	Regional diagnostic reference levels and collective effective doses from CT scanners in India
028	R. Schmidt J. Wulff L. Castra K. Zink	EFOMP	Variations of dose to the lung during computed tomography (CT) thorax examinations: A Monte Carlo study
206	A. Malusek E. Helmröd G. Alm Carlsson	Sweden	Patient specific kerma-area product as an exposure estimator in computed tomography: The concept and typical values
226	L.V. Canevaro M.M. Nunes C.D. Almeida	Brazil	Application of dosimetric methods for obtaining diagnostic reference levels in panoramic dental radiography



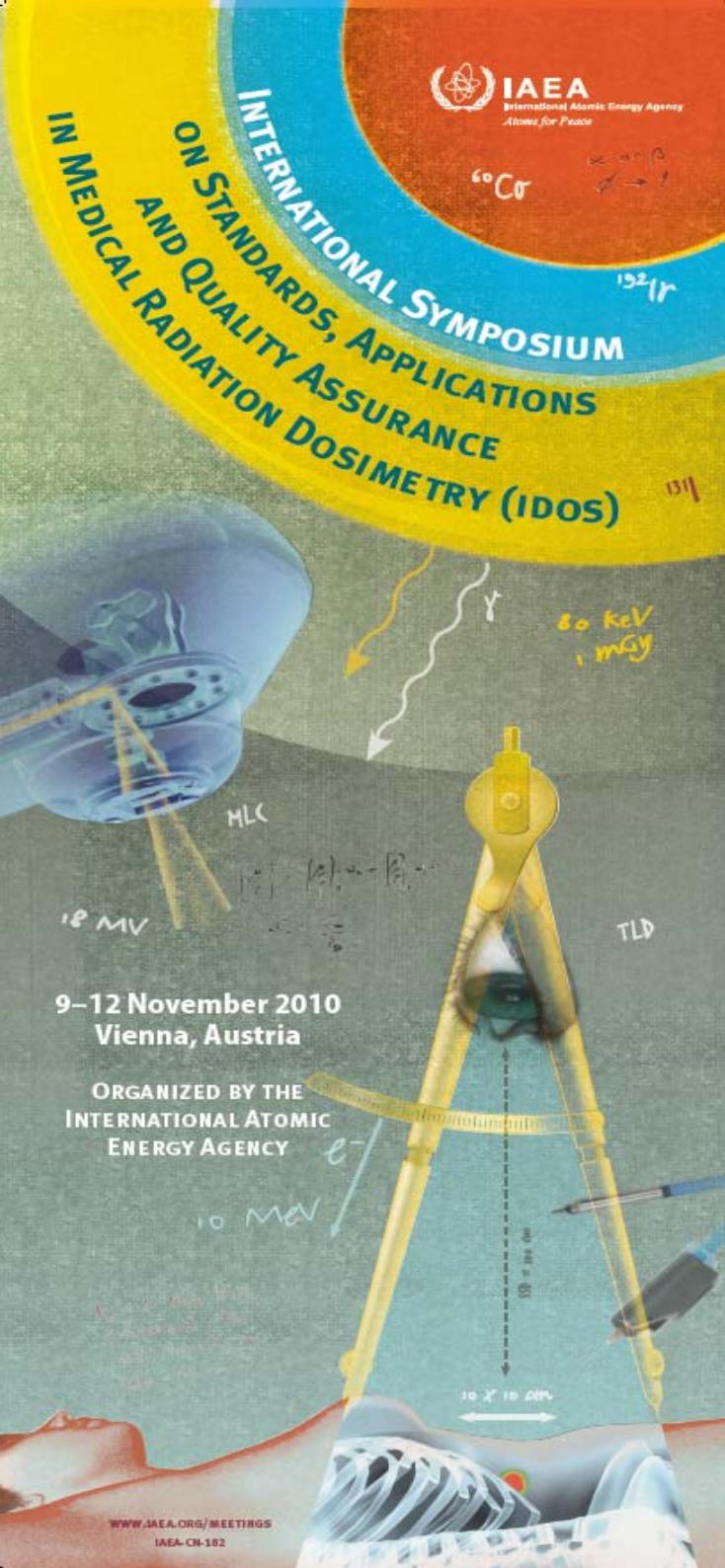
## THURSDAY, 11 NOVEMBER 2010

11:00 – 12:30 PARALLEL SESSION 7a:  
Clinical Dosimetry in Radiotherapy

Room: Conference Room M1

Chairs: G. Ibbott, AAPM  
Co-chair: J. Van Dyk, IAEA

No of Paper IAEA-CN-182-	Name	Designating Member State/Organization	Title of Paper
INV012	J. Van Dyk	IAEA	Verification of the radiation treatment planning process: Did we get it right?
INV013	D. Followill S. Davidson P. Alvarez G. Ibbott	AAPM	Assessing heterogeneity correction algorithms using the Radiological Physics Center's anthropomorphic thorax phantom
122	S. Lelie T. Lennertz B. Schaeken B. Bogdanov et al.	Belgium	LiFo-film dosimeters in skin dose measurements
249	A. Mauring	Norway	A dosimetric protocol for the use of radiochromic film in radiotherapy quality assurance in Norway
160	E. D'Agostino G. Defraene L. de Freitas R. Bogaerts et al.	Belgium	Peripheral doses in modern radiotherapy techniques: A comparison between IMRT, Tomotherapy and Cyberknife



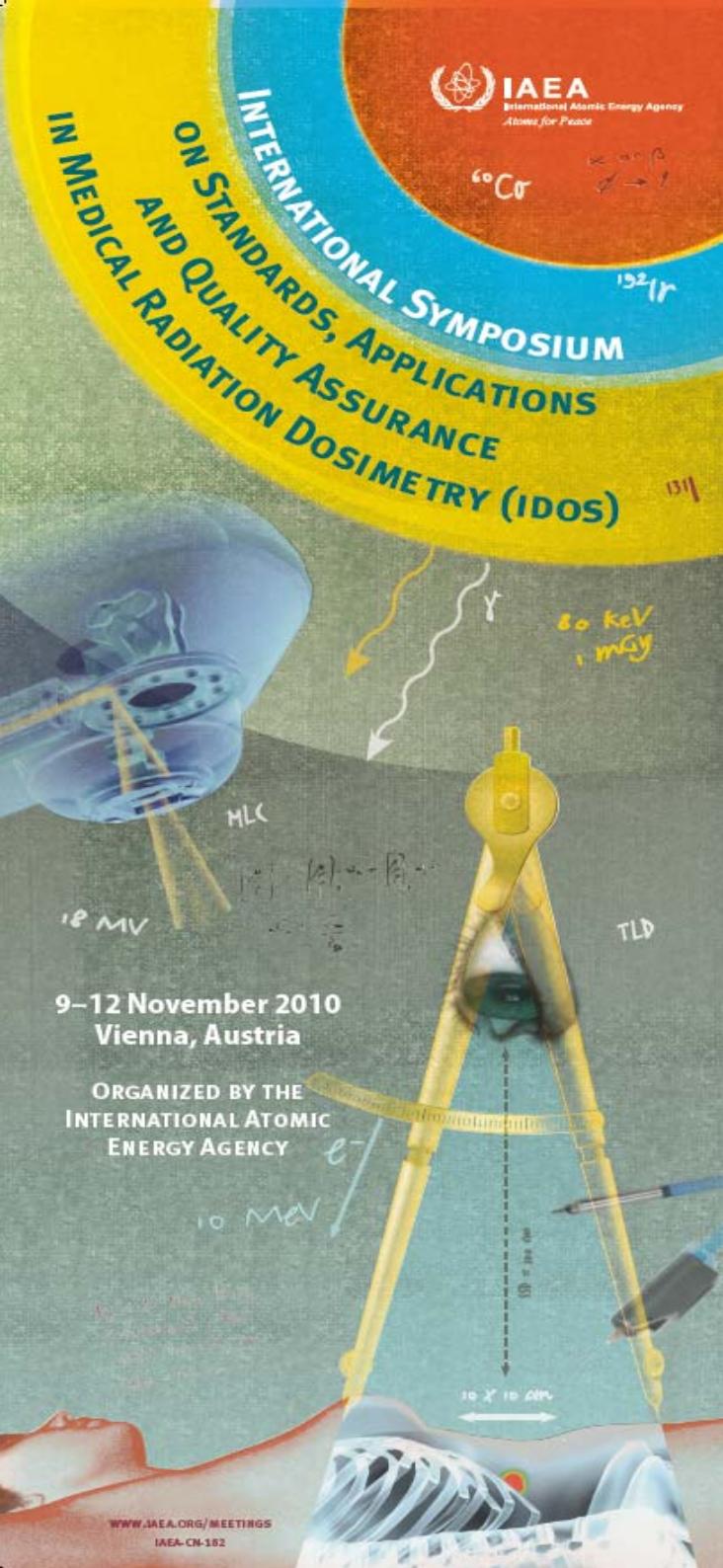
THURSDAY, 11 NOVEMBER 2010

11:00 – 12:30 PARALLEL SESSION 7b:  
Clinical Dosimetry in X ray Imaging II

Room: Press Room

Chair: K. Faulkner, EFOMP  
Co-chair: F. Shannoun, WHO

No of Paper IAEA-CN-182-	Name	Designating Member State/Organization	Title of Paper
INV014	<b>D. R. Dance</b> K.C. Young R.E. van Engen	EFOMP	A proposed European protocol for dosimetry in breast tomosynthesis
272	<b>A. Trianni</b> D. Gasparini R. Padovani	EFOMP	Assessment of trigger levels to prevent tissue reaction in interventional radiology procedures
155	<b>L. Cockmartin</b> D. Dance <b>A.J. Jacobs</b> H. Bosmans	Belgium	Digital breast tomosynthesis: Comparison of two methods to calculate patient doses
180	<b>D.H. Temperton</b> P.J. Barnes	IPEM	Compliance of full field digital mammography systems with the European protocol for image quality and dose
289	<b>R. Kramer</b> V.F. Cassola	Brazil	On the influence of the patient's posture on organ and tissue absorbed doses caused by radiodiagnostic examinations



## THURSDAY, 11 NOVEMBER 2010

14:00 – 15:00 **ROUND TABLE DISCUSSION 3:**  
Education and Training for Radiation  
Dosimetry

Room: Conference Room M1  
Press Room (via CCTV)

Chair: F. Nuesslin, IOMP

Panel Members: H. Amols, AAPM  
S. Christofides, EFOMP  
D. Thwaites, ESTRO  
H. Khouri, ALFIM

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15:00 – 15:30 **POSTER HIGHLIGHTS 4:**  
(PLENARY SESSION)  
Reference Dosimetry and Comparisons  
in Brachytherapy / Clinical Dosimetry in  
Radiotherapy

Room: Conference Room M1  
Press Room (via CCTV)

Chair: D. Georg, IOMP

Co-Chair: J. Venselaar, ESTRO

16:00 – 17:30 **POSTER VIEWING**

Location: A-C Building (Ground Floor)  
B Building (Ground Floor)

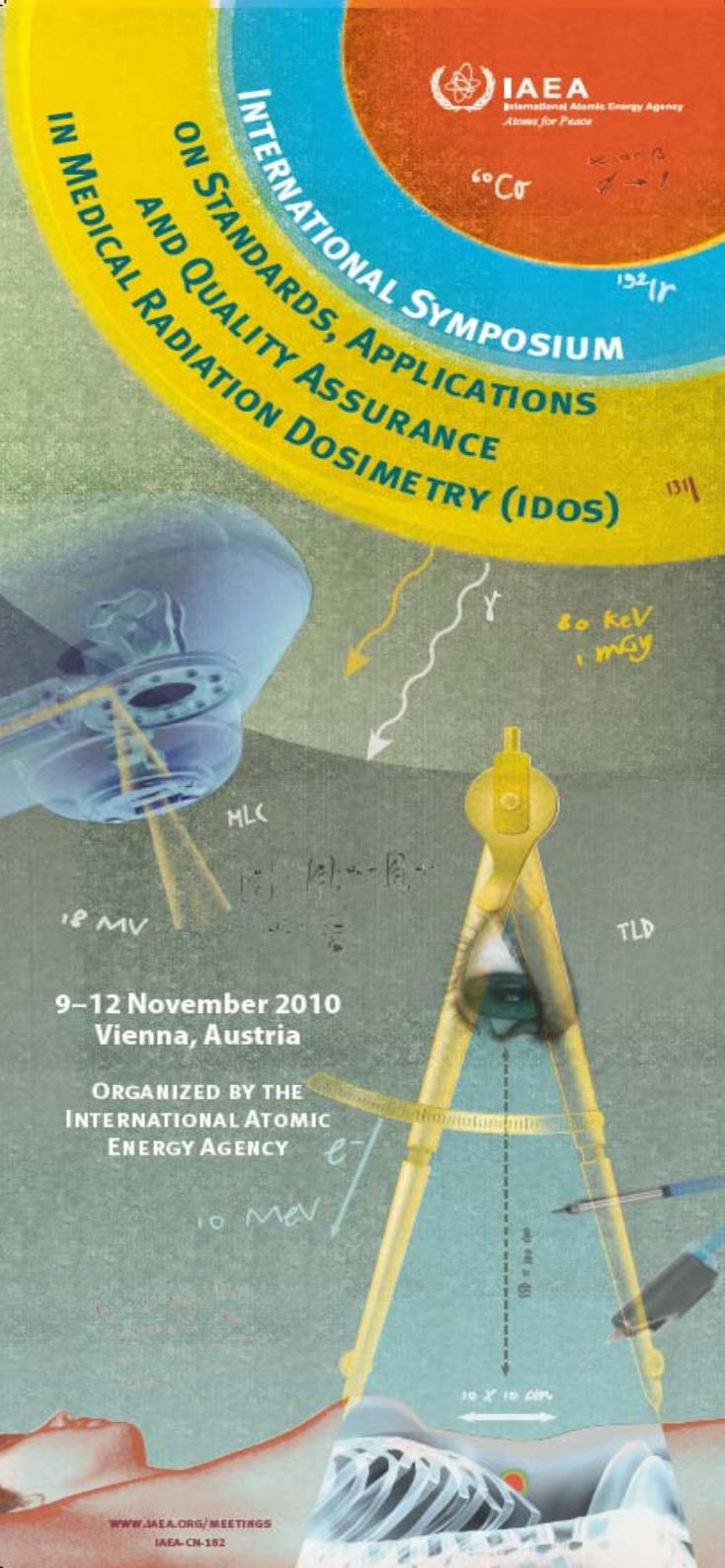
- External Quality Audits
- Reference Dosimetry and Comparisons in Brachytherapy
- Clinical Dosimetry in Radiotherapy
- Radiation Protection Dosimetry

M Building (1<sup>st</sup> Floor)

- Clinical Dosimetry in X ray Imaging
- Internal Dosimetry for Diagnostic and Therapeutic Nuclear Medicine

M Building (2<sup>nd</sup> Floor)

- Radiation Measurement Standards for Imaging and Therapy
- Reference Dosimetry and Comparisons in External Beam Radiotherapy



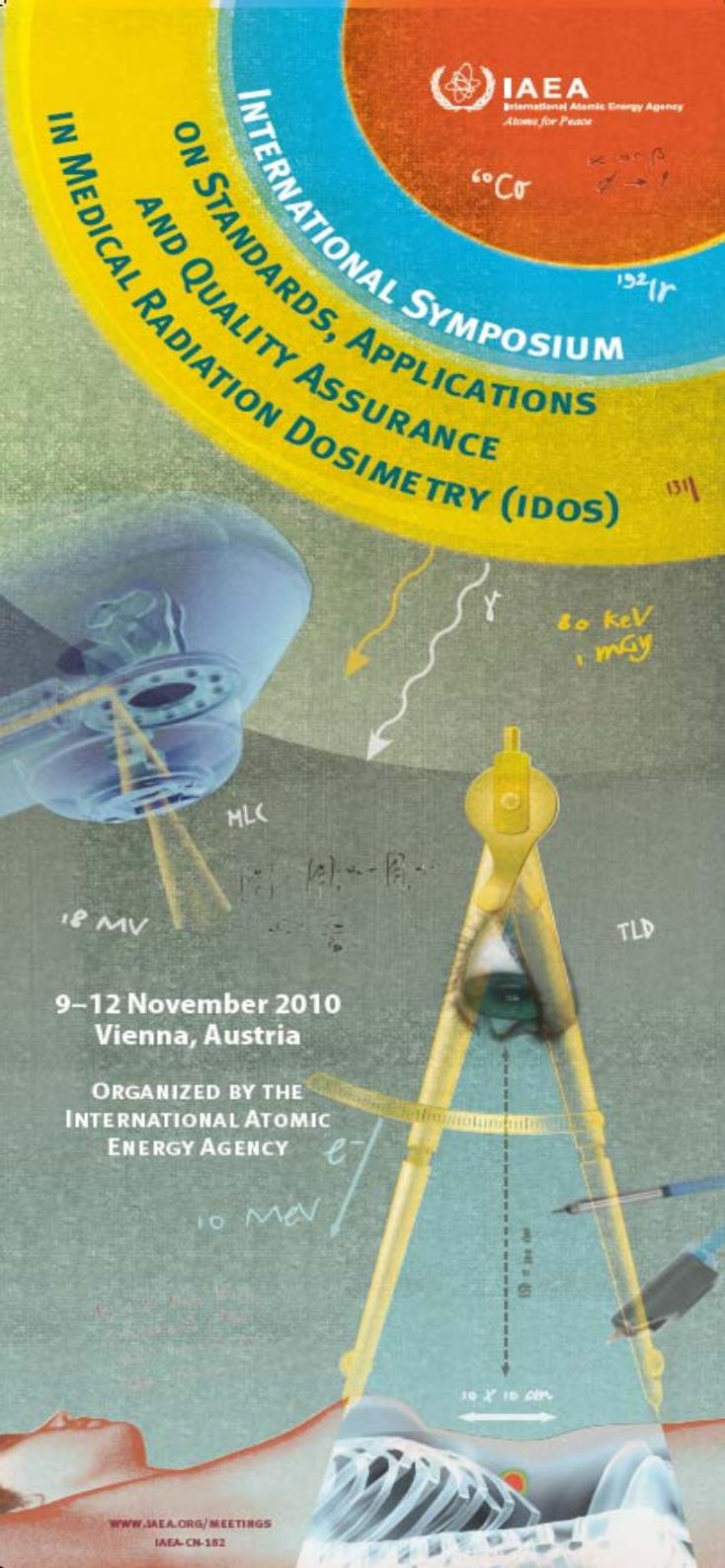
FRIDAY, 12 NOVEMBER 2010

08:00 – 08:50 COURSE 3:  
Brachytherapy: Beyond TG-43 to Improve  
Brachytherapy Dosimetry

Room: Press Room

Lecturer: F. Mourtada, United States of America

(REGISTERED PARTICIPANTS ONLY)



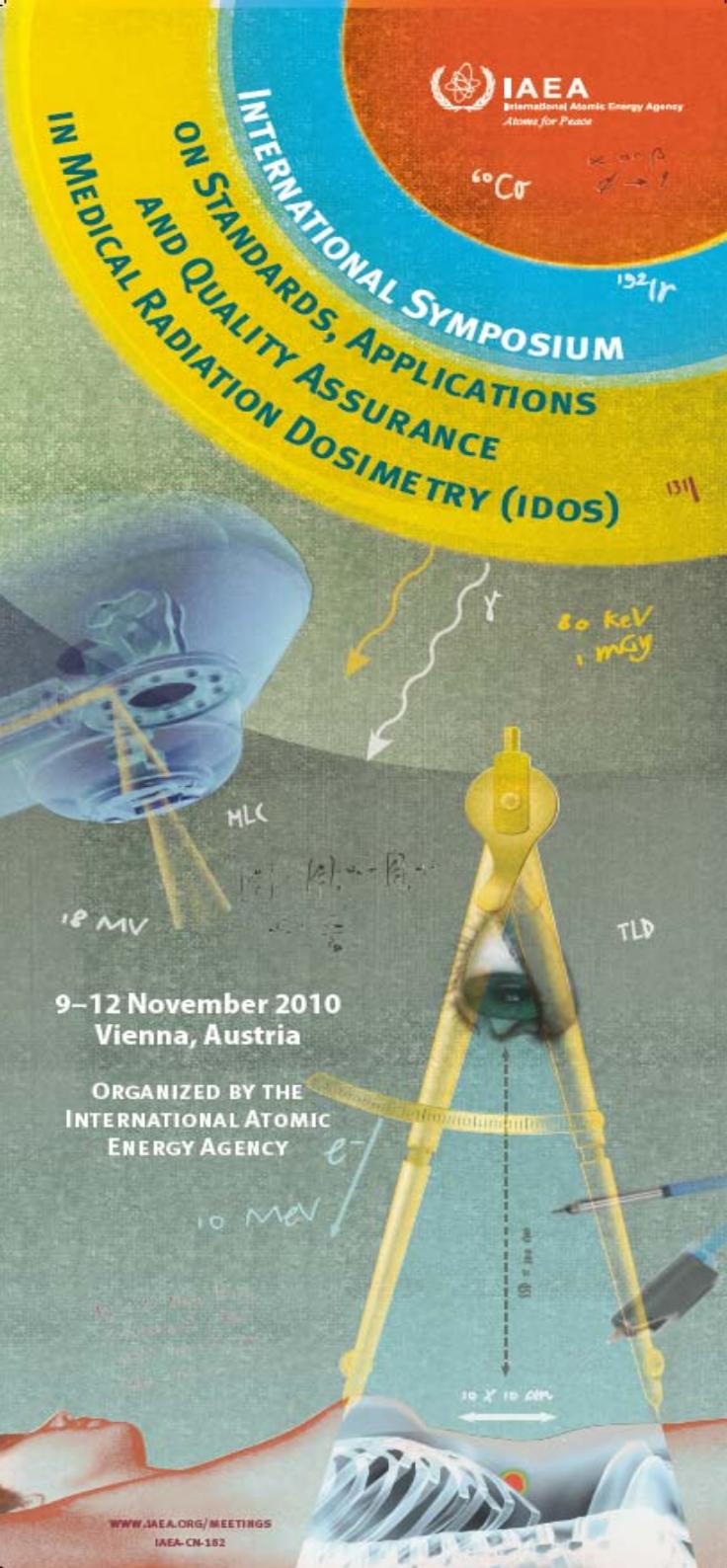
## FRIDAY, 12 NOVEMBER 2010

09:00 – 10:30 PARALLEL SESSION 8a:  
Reference Dosimetry and  
Comparisons in Brachytherapy

Room: Conference Room M1

Chair: J. Venselaar, ESTRO  
Co-chair: D. van der Merwe, South Africa

No of Paper IAEA-CN-182-	Name	Designating Member State/Organization	Title of Paper
INV015	<b>M. P. Toni</b>	Italy	New brachytherapy standards paradigm shift
016	<b>U. Quast</b> T.W. Kaulich A. Ahnesjö J.T. Alvarez-Romero et al.	Germany	From reference air kerma rate to nominal absorbed dose-rate to water paradigm shift in photon brachytherapy: ISO new work item proposal
081	<b>H.J. Selbach</b> M. Meier	Germany	Calibrations of high dose and low dose rate brachytherapy sources
157	<b>A. Aalbers</b> M. de Brabandere C. Koedoeder M. Moerland et al.	Netherlands	On the quality control of low energy photon brachytherapy sources: Current practice in Belgium and the Netherlands
018	<b>G. Walwyn Salas</b> M. Bambynek S. Gutierrez Lores H.J. Selbach et al.	Cuba	Cuban laboratory proficiency test for calibration of well type chambers using two types of HDR $^{192}\text{Ir}$ sources



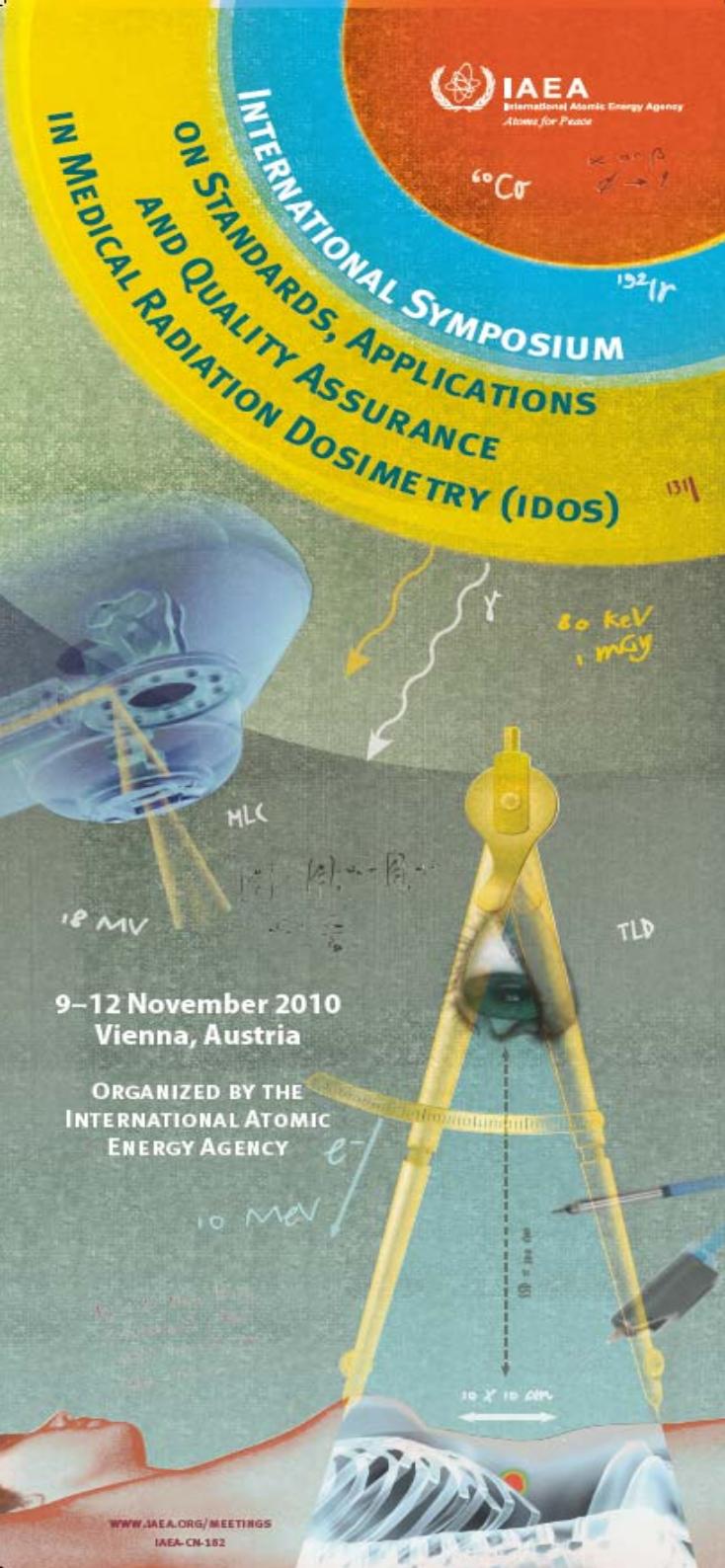
FRIDAY, 12 NOVEMBER 2010

09:00 – 10:30 PARALLEL SESSION 8b:  
Clinical Dosimetry in X ray Imaging III

Room: Press Room

Chair: J. Boone, ICRU  
Co-chair: D. McLean, IAEA

No of Paper IAEA-CN-182-	Name	Designating Member State/Organization	Title of Paper
INV016	<b>P. Toroi</b> A. Kosunen	Finland	Calibration of kerma-area product meters with a patient dose calibrator
080	<b>L. Büermann</b> R. Böttcher	Germany	Performance test of multi parameter measuring devices used for quality assurance in diagnostic radiology
086	<b>C. J. Hourdakis</b> A. Boziari E. Koumbouli	Greece	Calibration of pencil type ionization chambers at various irradiation lengths and beam qualities
137	<b>A. Sulieman</b> F. Abd-Alrahman B. Hussain M. Hamadelneel	Sudan	Radiation dose measurements for paediatrics and co-patients during micturating cystourethrography
143	<b>M. T. Bahreyni</b> <b>Toossi</b> M. Malekzadeh	Islamic Republic of Iran	Diagnostic reference levels in neonatal units



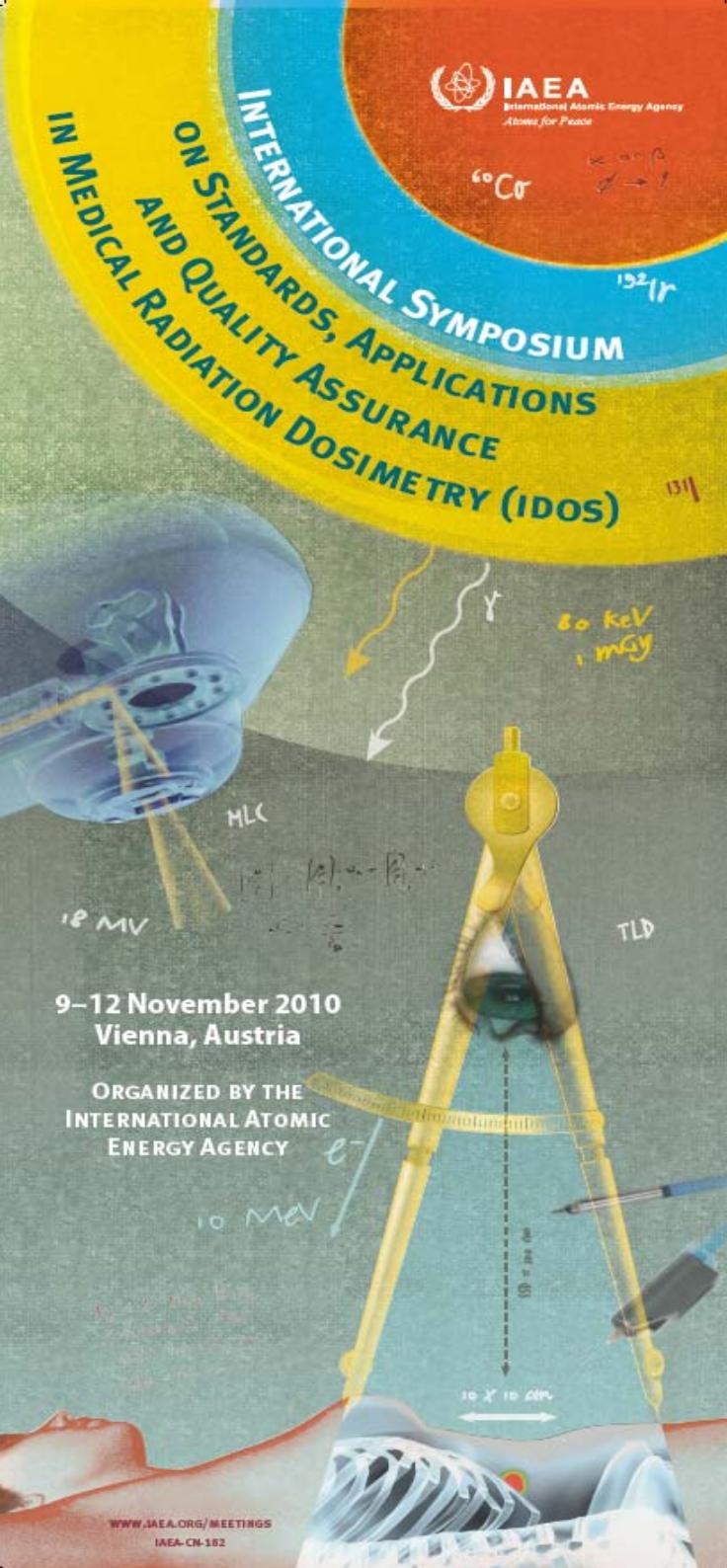
## FRIDAY, 12 NOVEMBER 2010

11:00 – 12:30 PLENARY SESSION 9:  
Radiation Protection Dosimetry

Room: Conference Room M1  
Press Room (via CCTV)

Chair: Z. Knezevic, Croatia  
Co-chair: R. Cruz-Suárez, IAEA

No of Paper IAEA-CN-182-	Name	Designating Member State/Organization	Title of Paper
INV117	<b>F. Vanhavere</b> Belgium		Occupational exposure of medical staff: An overview
296	<b>J. Le Heron</b> R. Padovani A. Duran D. Miller et al.	IAEA	Occupational doses in interventional cardiology: Experiences in obtaining worldwide data as part of the ISEMIR project
198	<b>M. Fülop</b> I. Makaiová P. Povinec D. Bacek et al.	Slovakia	Estimation of hand doses from positrons during FDG manipulation
159	<b>N. Ruiz López</b> M. Sans Merce I. Barth E. Carinou et al.	Switzerland	The ORAMED project: Optimization of radiation protection for medical staff in interventional radiology, cardiology and nuclear medicine



## FRIDAY, 12 NOVEMBER 2010

14:00 – 15:00     ROUND TABLE DISCUSSION 4:  
Calibration Traceability: What Does  
This Mean to You?

Room:     Conference Room M1  
Press Room (via CCTV)

Chair:     P.J. Allisy-Roberts, BIPM

Panel Members:     M. Lassmann, Germany  
M. Kramer, Germany  
P. Andreo, Sweden  
P. Toroi, Finland  
A. Torresin, EFOMP

15:30 – 17:00     CONCLUDING SESSION AND  
DISCUSSION

Room:     Conference Room M1  
Press Room (via CCTV)

Chair:     P.J. Allisy-Roberts, BIPM

Co-chair:     A. Meghzifene, IAEA

Rapporteur:     G. Ibbott, AAPM