

# Solvay Workshop in honour of Michel Godefroid

## 'New Frontiers in Atomic, Nuclear, Plasma and Astrophysics'

Brussels, November 25 - 27, 2019

### MONDAY 25 NOVEMBER

---

- 08:30 - 09:00 Registration
- 09:00 - 09:05 Welcome by Marc Henneaux (Director of the Solvay Institutes, Brussels)
- 09:05 - 09:25 Charlotte Froese Fischer - Opening Remarks: *In the beginning*
- 09:25 - 10:05 Marcel Arnould - *When Michel's favorite tiny electrons fool the big atomic nuclei in the skies*
- 10:05 - 10:25 Alain Coc (CT) - *Precision big bang nucleosynthesis*
- 10:25 - 10:50 COFFEE BREAK (in hall adjacent to the conference room)**
- 10:50 - 11:30 Chris Sneden - *The Impact of improved Atomic Physics on the Chemical Compositions of Low Metallicity Stars*
- 11:30 - 11:50 Carlos Abia (CT) - *A new assessment of the solar s- and r- process components from a galactic chemical evolution with rotating massive stars yields*
- 11:50 - 12:30 Peter Beiersdorfer - *Advanced in the Spectroscopy of Highly Charged Ions for Astrophysics, Plasma Science and Fundamental Physics*
- 12:30 - 13:50 LUNCH BREAK (in hall adjacent to the conference room)**
- 13:50 - 14:10 Norbert Przybilla (CT) - *Quantitative Spectroscopy of Early B-Type Stars: the Impact of High-Quality Atomic Data*
- 14:10 - 14:50 Tomas Brage - *Computational Atomic Structure for Plasma and Astrophysics*
- 14:50 - 15:10 Henrik Hartman (CT) - *Laboratory Atomic Spectroscopy for Near-infrared Astrophysics*
- 15:10 - 15:40 COFFEE BREAK (in hall adjacent to the conference room)**
- 15:40 - 16:20 Hans-Thomas Janka - *Stellar Explosions and Nucleosynthesis*

- 16:20 - 16:40 Georges Meynet (CT) - *Rotating massive stars as sources of fluorine 19 through their winds*
- 16:40 - 17:20 Wilfried Nörtershäuser - *Recent Results and Prospects for the Laser Spectroscopic Determination of Nuclear Charge Radii*
- 17:30 - 20:00 POSTER SESSION AND WALKING DINNER (9<sup>TH</sup> FLOOR)**

## TUESDAY 26 NOVEMBER

---

- 09:00 - 09:40 James Lattimer - *Dense Matter Equation of State from Compact Object Mergers*
- 09:40 - 10:00 Stéphane Hilaire (CT) - *Nuclear reaction ingredients based on the Gogny interaction*
- 10:00 - 10:20 Jon Grumer (CT) - *Kilonovae and the origin of the R-process elements - Lanthanide atomic data and Non-LTE radiative transfer modelling*
- 10:20 - 10:45 COFFEE BREAK (in hall adjacent to the conference room)**
- 10:45 - 11:25 Per Jönsson - *New developments in relativistic multiconfiguration calculations*
- 11:25 - 11:45 Giulio Del-Zanna (CT) - *Atomic data and solar spectral diagnostics, from the X-rays to the near infrared*
- 11:45 - 12:25 Bertrand Plez - *Atoms and Molecules in Stellar Atmospheres*
- 12:25 - 13:45 LUNCH BREAK (in hall adjacent to the conference room)**
- 13:45 - 14:25 Julian C. Berengut - *Precision calculations of atomic and ionic spectra and searches for new physics*
- 14:25 - 15:05 Iain Moore - *Laser spectroscopy as a probe for the size and shape of exotic nuclei*
- 15:05 - 15:25 Ruben de Groote (CT) - *New Frontiers in optical spectroscopy of radioactive nuclei: a case study on the silver isotopes*
- 15:25 - 16:05 Achim Schwenk - *Nuclei and matter: from fundamental interactions to structure and stars*
- 16:05 - 16:30 COFFEE BREAK (in hall adjacent to the conference room)**
- 16:30 - 17:30 **Solvay Colloquium:** *Galactic Paleontology* - Speaker: Eline Tolstoy
- 20:00 BANQUET**

## WEDNESDAY 27 NOVEMBER

---

- 09:00 - 09:40 Martin Asplund - *Precision Stellar Spectroscopy*
- 09:40 - 10:00 Alex Lobel (CT) - *The Belgian repository of fundamental atomic data and stellar spectra BRASS*
- 10:00 - 10:20 Paul Indelicato (CT) - *Testing Bound-state Quantum electrodynamics with muonic and antiprotonic atoms*
- 10:20 - 10:50 COFFEE BREAK (in hall adjacent to the conference room)**
- 10:50 - 11:30 Gerard O'Sullivan - *Spectroscopy to support short wavelength light source development*
- 11:30 - 11:50 Ephraim Eliav (CT) - *Atomic electronic structures at the edge of Periodic Table*
- 11:50 - 12:30 Witold Nazarewicz - *Is there an end to the periodic table?*
- 12:30 - 12:40 GROUP PHOTO (in the conference room)**
- 12:40 - 13:50 LUNCH BREAK (in hall adjacent to the conference room)**
- 13:50 - 14:30 Michaël Block - *Laser Spectroscopy of Heavy and Superheavy Elements*
- 14:30 - 14:50 Gerda Neyens (CT) - *Short-live radioactive (RaF) molecules: a new perspective for fundamental symmetry studies*
- 14:50 - 15:10 Rafael Ferrer (CT) - *High-resolution Laser Ionization Spectroscopy of Heavy Elements in Supersonic Gas Jets*
- 15:10 - 15:40 COFFEE BREAK (in hall adjacent to the conference room)**
- 15:40 - 16:20 Mikhail Kozlov - *Theory of polyvalent atoms*
- 16:20 - 17:00 Dag Hanstorp - *Laser spectroscopy of radioactive and stable negative ions*
- 17:00 Closing Speech