

FIRST CIRCULAR



7th edition of biannual p-process workshop

September 22-27, 2019

Boscareto Resort, Serralunga d'Alba (Cn), Italy

Please return the reply form at the bottom by the end of February 2019 to ensure that you will receive subsequent circulars about the meeting. Email address for contact: pwork2019@b2fh.org

Continuing the successful series of p-process workshops, in September 2019 we organize the 7th edition in Piedmont (Italy) in the Langhe region, one of the most characteristic area of Italy, less than 100 Km South from the largest city of Piedmont, Turin, where the most famous Italian wine (Barolo) grows.

Topics

Beyond iron, a small fraction of the total abundances in the Solar System is made of proton-rich isotopes, the p-nuclei. The clear understanding of their production is a fundamental challenge for nuclear astrophysics but still remains to be clarified.

Arnould and Goriely in Physics Report 2003 claimed that “*The first remarkable feature of this process is the scarcity of the efforts devoted to its understanding. In fact, after about 50 years of nuclear astrophysics research, the number of articles devoted to it still remains inferior to the 35 nuclides traditionally classified as p-nuclides.*” In view of this situation, they like to refer to the ‘nuclear astrophysics **p-nuts**’ when talking about the p-nuclides.

The p-nuclei can provide important constrain the nucleosynthesis in core-collapse and thermonuclear supernovae. The γ -process is the most established scenario for the production of the p-nuclei, which are produced via different photodisintegration paths starting on heavier nuclei. A large effort from nuclear physics is needed to access the relevant nuclear reaction rates far from the valley of stability. In addition for light-p nuclei the astrophysical process is still unknown: nu-p, alpha-rich freeze-out, neutrino winds are all possible astrophysical sites.

The workshop will cover the above mentioned topics and will explores the state of the art of experimental nuclear physics to provide nuclear data for stellar nucleosynthesis.

We plan to have invited talks that will give a broader overview of supernova models related to the production of the p nuclei, and of experimental and theoretical nuclear physics work on this topic. In addition, we plan to have invited talks related to *interstellar grains isotopic measurements*, the observational constraint of p-nuclei together with Solar System abundances.

Goals

The goal of the workshop is to

- Investigate the role of different kind of supernovae (core collapse and thermonuclear) in the synthesis of p-nuclei, providing constraints on the still uncertain supernova models;
- Create a priority list for critical reaction rates during explosive conditions to be measured, identifying the relevant nuclear reactions for the γ process;
- Comparison of prediction models to isotopic anomalies in pristine meteorites.

The final goal will be to build up a step further in solving the mystery of the astrophysical source/sources of p-nuclei.

Location

Serralunga d’Alba. Tourists from foreign countries get to admire this enchanted bit of Piedmont. We will be happy to share with all the participants a beautiful week of science on p-nuts nucleosynthesis enjoying typical ‘*Langhe jewels*’ (we will visit Fontanafredda cantines and vineyards, bought in 1858 by Vittorio Emanuele II, the first Italian king, where he was living and making Barolo wine).

We will provide a link for booking you room by the middle of March, when you will receive the second circular with the link to the website: 25 rooms will be available on site at Boscareto Resort and other rooms will be available in hotel nearby. A few rooms for families will be also available. Please note that accommodation will be available only for up to 50 participants so please consider booking well on time to make sure you will be able to attend.

Transport

We will organize transport from Turin Caselle airport and from Turin main train station to Serralunga d'Alba, and daily transports from different hotel to the workshop location.

Conference fee

Online registration will be opened to all interested participant on March 15th, 2019.

The registration fee is

220 Euro

180 Euro for students

180 Euro for accompanying persons

The conference fee will include lunches, coffee breaks, one afternoon tour at Fontanafredda cantines and a buffet after the tour.

Limited funding are available to support young researchers upon request.

SOCIAL ACTIVITIES AND EXCURSIONS

A welcome reception will be held in the evening of September 22, 2019 at Boscareto Resort (<http://www.ilboscaretoresort.it/en/>).

Excursion will be arranged on September 25th, 2019 with a vinery tour to the Italian first King cantines and a buffet (<http://www.fontanafredda.it/site/en/village/>).

Important dates

First Circular February 2019

Registration open March 15th 2019

Start Abstract Submission End of April

Start registration April 15th 2019

Abstract deadline May 15th 2019

Registration Closed June 30th 2019

Scientific Committee

- Almudena Arcones (University of Darmstadt, Germany)
- Gyorgy Gyürky (ATOMKI, Debrecen, Hungary)
- Claudia Lederer-Woods (University of Edinburg, UK)
- Nan Liu (Washington University, St. Louis, USA)
- Maria Schoenbachler (ETH, Zurich)
- Artemis Spyrou (Michigan State University, USA)

- Friedel Thielemann (Emeritus, University Basel, CH)

Sponsors

The workshop is co-sponsored by JINA-CEE, Hungarian Academy of Science, INFN, CAEN, Yobiminds Ltd.

Contacts

pwork2019@b2fh.org

We are looking forward to see you in Serralunga d'Alba!

Regards,

Claudia Travaglio (INAF-Turin, Italy, *chair*)
Maria Lugaro (Budapest, Hungary, *co-chair*)
Umberto Battino (University of Edinbug, UK)
Marco Pignatari (University of Hull, UK)
Gianpiero Gervino (INFN, Turin, Italy)

for the LOC.

Name

Surname

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Institute

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Staff/student

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Email

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