

# **NA04: Advanced Theory and Experiments for Nuclear Astrophysics – ATHENA**

**Dr. Kerstin Sonnabend**

**ENSAR Town Meeting**

**Warsaw, Poland**

**June 17<sup>th</sup> to 20<sup>th</sup>, 2013**

## **Task 1: Explosive Nuclear Astrophysics**

Phil Woods, Edinburgh, UK

Micha Hass, Weizmann Institute, Israel (deputy coordinator)

## **Task 2: Reactions at Low Temperatures and on Broad Mass Ranges**

Kerstin Sonnabend, Frankfurt, Germany (coordinator)

Sotiris Harrisopulos, Demokritos, Greece

## **Task 3: Nucleosynthesis in Neutron Capture Processes**

Claudia Lederer, Frankfurt, Germany

René Reifarth, Frankfurt, Germany

## **(Task 4: Nuclear Astrophysics Annual Meeting)**

## Task 1: Explosive Nuclear Astrophysics

1-1. Key reactions

1-2. Key technical developments

1-3. Key characteristics of novel detection systems

1-4. Key features of nuclear theory

- participants:

CERN, JYU, GANIL, GSI, MPIC, ATOMKI-HAS, TWI, INFN-LNS, UPC, PSI, UNIBAS, U-Edinburgh, UoY

- overlap to JRA07: THEXO

## Task 2: Reactions at Low Temperatures and on Broad Mass Ranges

2-1. Increase of synergy of existing laboratories and equipments

2-2. Major upgrades for long-term experimental programmes

2-3. Reaction rates of heavy-element nucleosynthesis

- participants:

UWIE, ULB, CNRS (IPN Orsay), FZD, TUD, GUF, Uni Köln, NCSRD, ATOMKI-HAS, HEBU, INFN (Napoli, Padova), CFNUL, IFIN-HH, CSIC-Madrid, UGRA, UGEN, UNIBAS

## Task 3: Nucleosynthesis in Neutron Capture Processes

3-1. Support during experimental campaigns at CERN

3-2. Support of data analysis and transfer to astrophysically relevant data

3-3. Preparation of future neutron sources

- participants:

TUW, UWIE, CUNI, CERN, CEA, FZD, GSI, GUF, NCSRD, NTUA, INFN (Bari, Bologna, LNL), OAR, OAT, ITN, CIEMAT, FAMN, UGRA, UPC, USC, IFIC

- Workshop on „*p*-process: present status and outlook“  
May 25<sup>th</sup> to 27<sup>th</sup>, 2011 @ Istanbul, Turkey
- Summer school on  
„Nuclear theory and astrophysical applications“  
July 24<sup>th</sup> to August 2<sup>nd</sup>, 2011 @ Dubna, Russia
- MASCHE Annual Meeting  
November 26<sup>th</sup>, 2013 @ Frankfurt, Germany
- ATHENA workshop on  
„Prospects in neutron time-of-flight“  
March 18<sup>th</sup> to 20<sup>th</sup>, 2013 @ Darmstadt, Germany
- Nuclear Physics in Astrophysics VI  
May 19<sup>th</sup> to 24<sup>th</sup>, 2013 @ Lisbon, Portugal

- ATHENA two-day workshop  
beginning of December, 2013 @ Brussels, Belgium  
local organizer: Pierre Descouvemont
- ATHENA summary meeting  
May 13<sup>th</sup> to 16<sup>th</sup>, 2014 @ Villa Vigoni, Lake Como, Italy
  - summary session for each task:  
overview talk by task leaders  
contributed talks by participants
  - future session for each task:  
discussion about future collaborations  
possibilities of future funding applications