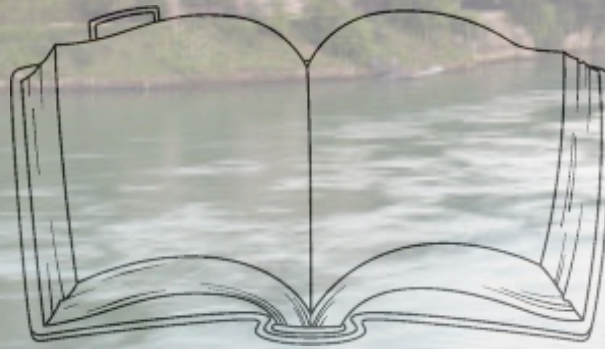


The White Book/Paper of NewCompstar



**Brainstorming & NewCompstar Working Group Meeting
September 29th – October 1st, Basel (Switzerland)**

This is not a conventional talk in which the results of a particular work are presented. The scope of this short talk is to initiate & motivate the discussion on the NewCompstar white book/paper to be delivered at the end of the Action

NewCompstar Commitment

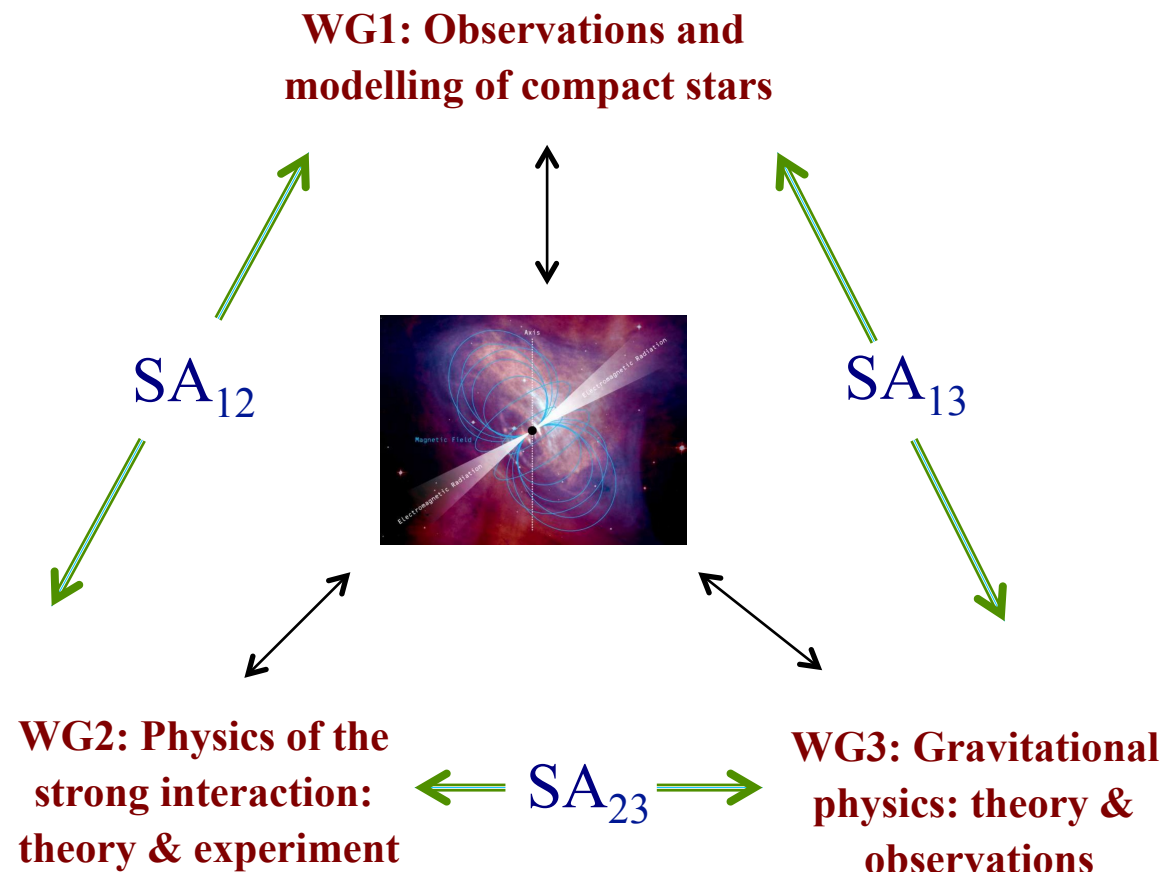
As expressed in the MOU of the Action (section C.3):

European leadership:

- Senior members of the Action will participate in major international conferences as spokespersons of the activities of the Action.
- During the second part of the Action, a “white paper” will be prepared to document the prospects and potential of future astronuclear physics initiatives. The paper will serve as a reference for the planning of future research in the field.

A proposal of coordination

A relatively easy way to coordinate this task is to take profit of the existing Working Groups & Synergy Agents



✧ Each WG can contribute with **3-4 topics** to the white book/paper which will be **coordinated** (does not means written) by the WGL, with the help of the TLs

✧ Contributions will be a kind **review** that **are new** in the field with the **connections** between WGs strongly emphasized

List of Topics (WG1)

- WG1: Observations & Modelling of Compact Stars
 - ❖ Neutron stars formation: Core Collapse Supernovae & Gamma Ray Burst (connec. with WG2 & WG3)
 - ❖ Explosive events in strongly magnetized neutron stars (connec. with WG2 & probably also WG3)
 - ❖ Pushing the limits of radio pulsar timing (strong connec. with WG3, with WG2 for I & R determination)
 - ❖ Transitional binary pulsars: mixing-up accretion phases (weak connec. with WG2 & WG3)

Nanda Rea
Niccoló Bucciantini
Pablo Cerdá-Durán
Tiziana di Salvo
Wynn Ho

List of Topics (WG2)

➤ WG2: Physics of Strong Interaction: Theory & Experiment

- ❖ Nuclear EoS for Compact Stars & Supernovae
- ❖ Low-energy QCD & Super-dense matter
- ❖ Superfluidity & Superconductivity in Compact Stars
- ❖ Transport phenomena & Reaction rates for Compact Stars & Supernovae

Isaac Vidaña
Gergely Barnafoldi
Nicolas Chamel
Laura Tolós
Adriana Raduta

List of Topics (WG3)

➤ WG3: Gravitational Physics: Theory & Observations

❖ Binary neutron star merger

- ✧ Oscillations of the post-merger remnant
- ✧ Connection with short GRBs & other electromagnetic emission
- ✧ Effect of magnetic fields

❖ Tidal effects in binary inspiral

❖ Gw emission from single neutron stars

- ✧ Steady rotating stars
- ✧ Oscillations & Instabilities

❖ Testing Alternative Gravity Theories

Ian Jones
Andreas Bauswein
Bruno Giacomazzo
Leonardo Gualtieri
Tanja Hinderer

The discussion is served

