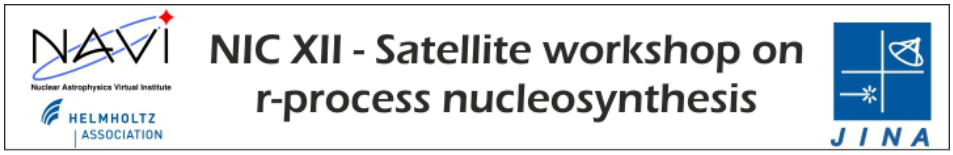

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JINALIB: A new resource for nuclear astrophysics computation

Saturday, 4 August 2012 11:45 (30 minutes)

A reoccurring theme throughout nuclear astrophysics is the need for and use of the best available nuclear data as input for astrophysics calculations. Relevant nuclear data includes, but is not limited to nuclear masses, partition functions, thermonuclear reaction rates, weak interaction rates and fission fragment distributions. With the r-process reaction flow typically far from direct experimental data, we rely heavily on theoretical estimates for this nuclear data input.

To facilitate the generation of self-consistent nuclear inputs, we have started development of a new online resource for nuclear data and astrophysics validation. This resource combines and extends the capabilities of the JINA REACLIB and NUCDATALIB databases, and is tentatively called JINALIB. The new resource will continue the JINA effort in maintaining uptodate nuclear physics input, whether experimentally or theoretically based, available for download in several formats. The validation side of the database will provide the nuclear physics input and astrophysics output for several nucleosynthetic processes, so that identical data can be used in a variety of astrophysics codes, whose results can be validated against the JINA generated output.

I will present our plans and progress with the new JINALIB resource.

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