

# Technical Meeting on the Compilation of Nuclear Data Experiments for Radiation Characterization

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## Status of JADE, an open-source software for nuclear data libraries V&V

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In the last couple of years, a combined effort between NIER, Università di Bologna and Fusion For Energy led to the development of JADE, a python-based open-source software for the Verification and Validation of nuclear data libraries. Nuclear data is fundamental for particle and radiation transport simulations which, in turn, are responsible for the evaluation of key quantities for fusion-related machines design such as nuclear heating, DPA, particles production and dose rates. The aim for the project is to offer standardization and automation to the V&V process of data libraries in order to speed up their release cycles and, at the same time, improve the quality of the data. JADE takes advantage of MCNP for the particles and radiation transport simulations and, even if it is potentially applicable to the whole nuclear industry, a particular focus on fusion applications is obtained through the selections of the default benchmarks that have been implemented. The code was recently made publicly available to the community and the status of its development is summarized. The more important features and benchmarks (both computational and experimental) are described, together with a brief discussion on the major case studies where JADE has been recently used. Lastly, the current strength and limitations of the tool are evaluated and the foreseen future developments for the project are outlined.

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