



INVITATION

for a

VERA - SEMINAR

with

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**Harnessing neutron power: challenges and insights
from neutron activation studies at JET**

Fusion energy holds the promise of supplying safe, low-carbon energy for future generations, but it also poses one of the greatest scientific and engineering challenges of our time. Recent scientific milestones achieved at JET and NIF have stimulated global interest and commitment to advancing fusion technologies. In fusion plasma, deuterium-tritium (DT) reactions produce neutrons, contributing 80% of the energy released in each reaction. These neutrons exit the plasma, traversing the machine and interacting with its materials; harnessing fusion power through technology development requires a deep understanding of this nuclear environment.

The first part of this seminar will provide background and perspectives on fusion, highlighting some outstanding nuclear challenges. The second part focuses on recent neutron activation studies at JET DT experiments, examining various ITER materials exposed to the nuclear environment. Post-irradiation analysis, including high-resolution gamma spectrometry, has offered valuable insights, alongside detailed neutronics analysis. Comparisons with simulations reveal areas of agreement and some discrepancies to explore in future work.

Thursday, 10. October 2024, 16:30 o'clock

**1090 Wien, Währinger Str. 17, "Kavalierstrakt",
1. Stock, Victor-Franz-Hess Hörsaal**