

AGA 9: Verification

Time: Thursday 9:30–11:00

Location: EMH 225

Invited Talk

AGA 9.1 Thu 9:30 EMH 225

Nuclear disarmament - technical means for verification —
 ●WOLFGANG ROSENSTOCK — Fraunhofer INT, Appelsgarten 2, 53879 Euskirchen

Invariably nuclear weapons are of tremendous importance in our world. States possessing those weapons argue they need them for their national security. However article VI of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) calls for a further treaty on complete nuclear disarmament under effective international control. There are many indicators for the presence of a nuclear weapon but the only definite signature is the detection of fissionable material like Uranium or Plutonium. I will present different physico-technical methods for the non-contact detection and identification of this special nuclear material on-site. While these methods and procedures may not to disclose any proliferation relevant details, they should nevertheless give non-nuclear weapon states highest confidence in the results especially. Achieving such confidence is the grand challenge. In addition these methods must be flexible since some nuclear weapon states are modernizing their arsenal, like the United States in the case of the W80 thermonuclear warhead. Furthermore these measurement techniques will be of great importance in preventing weapons of mass destruction

(WMD) proliferation as well as nuclear terrorism.

AGA 9.2 Thu 10:30 EMH 225

Nuclear material control: current R&D projects and challenges for verification — ●PETER SCHWALBACH — Europäische Kommission, Generaldirektion Energie, Direktion Kernmaterialüberwachung, L-2920 Luxemburg, Luxemburg

The European Commission implements Euratom Safeguards to control nuclear material in all civil nuclear facilities across the EU. The inspection regime consists of three pillars: nuclear material accountability, conformity controls, and - in the focus of this presentation - physical verification of nuclear material. For the latter, a variety of methods is available today and can be applied by inspectors to solve most verification tasks. Continuous developments in the nuclear fuel cycle call for improved or novel methods. Changing designs of fresh fuel e.g. requires improved verification tools. The most important upcoming challenge is expected to be presented by the activities around spent fuel at the back end of the fuel cycle call intermediate stores, conditioning plants and final storages. The presentation will provide an overview of current development, recent achievements, and projects aiming to face the upcoming challenges.