

## AKA 2: Nuklearwaffenentwicklungen

Time: Thursday 9:30–12:00

Location: H45

### Invited Talk

AKA 2.1 Thu 9:30 H45

**The Reliable Replacement Warhead Program and the Future of the US Nuclear Stockpile** — ●ROBERT NELSON — Union of Concerned Scientists, Cambridge/Mass.

The United States Department of Energy (DOE) has proposed to develop a new family of nuclear warheads intended to replace the current US nuclear arsenal over the next several decades. DOE says these Reliable Replacement Warheads can be developed without requiring underground nuclear testing, while being more reliable and less costly to maintain than current warheads.

In fact, the RRW program makes little technical or political sense: there is no reliability problem with the warheads in the current US nuclear stockpile. Introducing new and untested designs could decrease confidence in warhead reliability. Regardless of the technical feasibility, there will be tremendous political pressure to test any new design before a new weapon enters the stockpile. A resumption of underground nuclear testing would end the testing moratorium the United States and Russia have maintained since 1992.

### Invited Talk

AKA 2.2 Thu 10:30 H45

**The Modernization of the Russian Strategic Forces and the Future of the US-Russian Arms Control** — ●EUGENE MIASNIKOV — The Center for Arms Control, Energy and Environmental Studies at Moscow Institute of Physics and Technology

The bilateral U.S.-Russian strategic arms control dialog was at its peak at the end of the Cold War, when the very successful Intermediate Nuclear Forces (INF) and Strategic Arms Reduction (START) Treaties were succeeded. Unfortunately, it is almost non-existent these days. With the end of START in 2009, an important verification mechanism, that currently provides transparency of U.S. and Russian strategic forces and their activities, might be lost, if the sides fail to work out a replacement for it. At the same time the role of transparent nuclear arms reductions by nuclear states is growing for the future of the Non-

proliferation Treaty (NPT) regime, and this factor should stimulate U.S. and Russia to renew the strategic arms control dialog.

The talk focuses on modern trends in the evolution of U.S. and Russian nuclear forces and doctrines of their implementation as well as on the impact of these tendencies on attitudes toward arms control. A framework of a new bilateral strategic arms reduction agreement that might replace START and enforce Strategic Offensive Reductions Treaty (SORT) is proposed.

AKA 2.3 Thu 11:30 H45

**Modernisierung der Nuklearwaffenarsenale: USA, Frankreich und das Vereinigte Königreich** — ●GIORGIO FRANCESCHINI — Hessische Stiftung Friedens- und Konfliktforschung, Leimenrode 29, 60322 Frankfurt am Main

Ein Jahrzehnt nach Unterzeichnung des Umfassenden Teststoppvertrages steigen die Budgets der amerikanischen, französischen und britischen Nuklearwaffenlabore erneut an: Supercomputing, Laserfusionsanlagen, Hydrodynamische Experimente und intensive Materialforschung sind die Eckpunkte eines Forschungsprogramms, das drei Ziele verfolgt:

1. Verbesserung des theoretischen Verständnisses der Funktionsweise von Nuklearwaffen
2. Verlängerung des Lebenszyklus der existierenden Nuklearwaffen durch rechtzeitiges Auffinden und Reparieren von Alterungsdefekten (kurzfristig)
3. Modifizieren und Redesign von Nuklearwaffen mit dem Ziel einer kompletten Arsenaltransformation (langfristig)

Erste Studien zur Materialalterung haben aber gezeigt, dass Plutonium-Sprengköpfe etwa ein Jahrhundert lang stabil und zuverlässig funktionieren und es daher keine Notwendigkeit für größere Modernisierungsprogramme gibt, es sei denn man verbindet die Transformation mit der Entwicklung qualitativ neuer Waffensysteme.

Dazu sollen im Abschluss diese Modernisierungsprogramme im Lichte der internationalen Abrüstungsverträge (Nichtverbreitungsvertrag und Teststoppvertrag) kritisch diskutiert werden.