

AGA 4: Missile Defense and Nuclear Disarmament

Zeit: Donnerstag 14:00–18:00

Raum: JUR D

Hauptvortrag AGA 4.1 Do 14:00 JUR D
Options for European Missile Defense — ●DEAN WILKENING — CISAC, Stanford University

On September 17, 2009 President Obama cancelled the US missile defense "Third Site" which called for the deployment of ten ground-based interceptors in Poland and a European Midcourse (X-band) Radar in the Czech Republic. This talk examines the technical effectiveness of this architecture against hypothetical Iranian ballistic missile threats in an effort to explain why it was cancelled, as well as the impact of this system on Russia's missile force. In its place the Obama Administration proposed a "phased adaptive architecture" consisting of four distinct phases timed to coincide with four different versions of the US Standard Missile-3 interceptor to be deployed over the next decade. This talk will address the potential effectiveness of this architecture. This analysis forms the basis upon which to discuss NATO participation in a European missile defense architecture, possible Russian participation, and the likely strategic and arms control impact of these systems in Europe and beyond

Hauptvortrag AGA 4.2 Do 15:00 JUR D
Does Missile Defense undermine Strategic Stability and Future Disarmament? — ●GÖTZ NEUNECK — c/o IFSH, Beim Schlump 83; 20144 Hamburg

The Obama-Administration announced the cancellation of the Missile Defense plans of the previous Bush-II- Administration, but the US will proceed with a new MD-infrastructure that depends heavily on the use of the US Navy SM-3 interceptors which can be produced in high numbers. Some voices in Russia still argue that in the long run the deployment of global MD elements can undermine the deterrence arsenals of Nuclear weapon states thus, undermining strategic stability. The relationship between missile defense and deterrence is ambiguous; missile defense potentially jeopardizes classical deterrence based on mutually assured destruction (MAD) and can create an incentive to arms race and the development of counter-measures. The contributions examines under which condition missile defense can challenge future nuclear disarmament or contribute for a nuclear weapon free world.

AGA 4.3 Do 16:00 JUR D
US Missile Defense in and for Europe: New Developments and its Implications — GÖTZ NEUNECK, CHRISTIAN ALWARDT, and ●HANS CHRISTIAN GILS — Institut für Friedensforschung und Sicherheitspolitik an der Universität Hamburg (IFSH)

In the talk, the major findings of a detailed study on Ballistic Missile Defense in Europe, prepared by various members of the IFSH, are presented. The aim of this study is to discuss the declared objectives of the US-administration, the technological state-of-the-art and the controversy about Ballistic Missile Defense (BMD), as well as its possible implications for missile proliferation and arms control. Special attention is given to the different missile defense programs designed to protect Europe. The results of own simulations are presented, which evaluate the range and geographic coverage of the strategic missile defense systems to be deployed in Europe, taking into account several scenar-

ios. Particularly, beside the approach of the Bush-Administration, this analysis includes the concept recently brought forward by the Obama-Administration, and concludes with a first assessment of its potential future capacity. Additionally, the implications of the introduction of missile defenses for arms control, disarmament and the political relationship between the involved parties are discussed. The issue of strategic stability as well as the consequences for Asia and the Middle East will also be included.

30 Min. Pause

AGA 4.4 Do 17:00 JUR D
The Proliferation Potential of Gas Centrifuge Enrichment Technology - Eroding the NPT Deal? — ●MATTHIAS ENGLERT — CISAC, Stanford University

The problem of civil-military ambivalent use of sensitive nuclear technologies is currently undermining the stability and the future of the nonproliferation regime. The talk will start by giving a summary of the recent developments in the ongoing controversy over the iranian nuclear program including a brief technical analysis of the current status of the iranian centrifuge program. An overview of other enrichment activities worldwide and an estimate of future enrichment activities will be complemented by an analysis of several possible scenarios for the production of highly enriched uranium. Scenarios will include covert production and break-out at known facilities and production by undeclared ones. For the analysis the cascade simulation tool MATHCASC will be used and its new features will be presented. The talk will briefly summarize several proposed solutions to the proliferation problem of centrifuge technology, trying to broaden the perspective from the case of Iran to the general use of this central sensitive technology.

AGA 4.5 Do 17:30 JUR D
Homogeneous thorium-plutonium fuels - proliferation risk and potential for plutonium reduction — ●LEANDER HOHMANN, MATTHIAS ENGLERT, and WOLFGANG LIEBERT — Interdisziplinäre Arbeitsgruppe Naturwissenschaft, Sicherheit und Abrüstung (IANUS), TU Darmstadt

Significant amounts of plutonium already separated from spent fuel (today 500 t worldwide) pose a proliferation problem that has to be tackled in a sound way. Advanced reactor concepts discuss thorium fuels as alternative to mixed uranium/plutonium oxide (MOX) and inert matrix fuels (IMF) to enable proliferation-resistant disposal of plutonium. Thorium fuels are ascribed special potential to dispose of weapons-usable plutonium since they do not give rise to production of new plutonium as is the case for conventional uranium fuels. On the other hand, employing such fuels leads to production of fissile U-233 that, in principle, is nuclear weapon usable material, therefore constituting a proliferation risk. In comparison with similar previous work for IMF and MOX fuels, we performed MCNP cell burn-up calculations with different homogeneous thorium-plutonium fuels, analysing their potential to dispose of plutonium and the proliferation concern associated with their use.