

AGA 3: Military-relevant R&D and New Technologies

Zeit: Donnerstag 10:30–13:00

Raum: VMP 9 HS

Hauptvortrag AGA 3.1 Do 10:30 VMP 9 HS
The Increasing Militarisation of Universities in the UK and Elsewhere — ●STUART PARKINSON and CHRIS LANGLEY — Scientists for Global Responsibility, Folkestone, Kent, UK

Two important trends have contributed to a growth of military involvement in universities in recent years, especially in countries such as the USA and UK. The first is the so-called 'War on Terror' led by the US government, which has stimulated a major increase in the number of programmes addressing research and development with military objectives. The second is the growth in the commercialisation of universities, which involves greater collaboration with industry and the restructuring of the universities to behave more like businesses.

This presentation will focus mainly on developments in the UK over the last 5-10 years - especially the expansion of military-university 'partnerships' and the ethical concerns that they raise. It will also include some discussion about the situation in the USA and Europe. It will be based mainly on the research carried out by the UK organisation, Scientists for Global Responsibility (SGR).

AGA 3.2 Do 11:30 VMP 9 HS
Unmanned Military Systems: Preventive Arms Control Needed — ●JÜRGEN ALTMANN — Experimentelle Physik III, TU Dortmund, 44221 Dortmund

Unmanned vehicles find increasing military interest. About 50 countries produce or develop unmanned aerial vehicles, 20 export them. Providing them with weapons is underway in the USA; further countries developing unmanned combat air vehicles are France, Germany, Russia and the UK. In particular the US military are pushing for an integrated approach for air, ground, water-surface and underwater vehicles, the outlook extends to 2032. Arms-control treaties have only marginal effect up to now. Export controls are in effect for ballistic missiles, cruise missiles and UAVs - however these controls pose no limits on the strongest military powers. Various problems raise concerns about peace and international stability, the international law of warfare or the security of societies: proliferation to crisis regions, killing by remote control - or even by autonomous machine decision -, and the possible use for terrorist attacks. Preventive arms control is advisable; ideas will be presented.

AGA 3.3 Do 12:00 VMP 9 HS
New developments in laser technology and the assessment of their implications for international politics — ●JAN STUPL¹, CLAUS EMMELMANN², GÖTZ NEUNECK³, and HARTWIG SPITZER⁴ — ¹Center for International Security and Cooperation (CISAC), Stanford University — ²Institut für Laser- und Anlagensystemtechnik (iLAS), TU-Harburg — ³Institut für Friedensforschung und Sicherheitspolitik an der Universität Hamburg (IFSH) — ⁴Institut für Experimentalphysik, Universität Hamburg

Recent developments in laser technology, like the advent of high power fibre lasers and chemical lasers, open up new possible weapon applications for laser technology. This has implications for international politics. In order to assess these implications, a science-based understanding of the technical capabilities is a prerequisite.

In its first part, this paper will introduce recent developments in laser technology. The second part will present a method which was developed to assess possible laser applications and their consequences. This method includes the beam propagation including atmospheric effects, the calculation of temperature fields in radiated objects and the calculation of the induced thermal stress field. The last part of the talk will present the application of the devised method using case studies in the realm of international security.

AGA 3.4 Do 12:30 VMP 9 HS
Digitale Luftbildkameras für den Open Skies-Vertrag — ●HARTWIG SPITZER — Institut für Experimentalphysik, Universität Hamburg

Der Open Skies-Vertrag öffnet den Luftraum von Nordamerika, Russland und großen Teilen Europas für kooperative Beobachtungsflüge. Zur Zeit werden ausschließlich photographische Kameras mit einer Bodenauflösung von 30 cm eingesetzt. Der Vertrag erlaubt aber auch die Verwendung anderer Sensoren, insbesondere Wärmebildsensoren und künftig wahrscheinlich auch digitale Luftbildkameras mit vier Farbkämen. Zur Überprüfung, ob die vertraglich vereinbarte Auflösung eingehalten wurde, sind aufwändige Prüfverfahren entwickelt worden. Im Vortrag wird über diese "Zertifizierungsverfahren" berichtet. Anschliessend werden Rückschlüsse, die aus den Bildern gezogen werden können, und politische Perspektiven des Vertrages diskutiert.