



EINLADUNG
zum
VERA - SEMINAR
von

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**Trace analyses at the single particle level with
Atom Trap Trace Analysis
for ^{39}Ar**

Atom optics has found many applications in different fields of physics. In the context of environmental physics the method of Atom Trap Trace Analysis (ATTA) has opened a new level of dating of water in the regime of very old water (millions of years) with ^{81}Kr and recent water of the last 1000 years with ^{39}Ar . The latter is the topic of this seminar revealing the challenges and experimental solutions to work with ^{39}Ar concentrations in Ar as small as $1:10^{16}$. After the detailed discussion of the experimental techniques I will present the first results on dating of water with this method [1] and discuss the potential for samples as small as 1 liter. Being able to date such small samples we will open up a route for detecting the age distribution of the oceans.

[1] F. Ritterbusch et al., Groundwater dating with Atom Trap Trace analysis of ^{39}Ar , *Geophys. Res. Lett.* **41** (2014) 6758, doi:10.1002/2014GL061120

Donnerstag, 26. November 2015, 16:30 Uhr
1090 Wien, Währinger Str. 17, "Kavalierstrakt",
1. Stock, Victor-Franz-Hess-Hörsaal