



EINLADUNG

zum

VERA - SEMINAR

von

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**Guarding the international δ -scales
for stable isotope measurements**

Variations of isotope ratios of elements provide insight in many processes, whether of geologic, biogenic, industrial or environmental nature. In climate change research, the variation of carbon isotopic composition in atmospheric CO₂ helps to delineate its sources and sinks. The high measurement precision is achieved by direct comparison of samples with established international reference materials, expressed in the so called δ -scale notation (deviation of the isotope ratio of the sample relative to the one of the international reference material).

While the concept is well proven and applied now for over 30 elements, it depends on the long-term availability of the scale defining reference materials. At the IAEA, scale defining materials for hydrogen, carbon, oxygen and sulphur are preserved and distributed.

Challenges start when δ -scale defining reference materials are exhausting and need to be replaced to maintain the worldwide consistency of measurements over time. Examples for such replacements for the elements hydrogen, oxygen and carbon will be presented to show practical problems and their solutions. Proper uncertainty assessments are key for success. In summary, reference materials will remain indispensable for the realisation of stable isotope ratio scales.

Donnerstag, 29. November 2018, 16:30 Uhr

**1090 Wien, Währinger Str. 17, "Kavalierstrakt",
1. Stock, Victor-Franz-Hess Hörsaal**