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Talk title	INTERACTION AND TEXTURAL VARIETY OF CARBONATITES AND ALKALINE SILICATE ROCKS FROM ONDURAKORUME (NW NAMIBIA)
By	Pd. Dr. rer. nat. Benjamin Walter of Karlsruhe Institute of Technology and MSc. Andreja Ladisic of University of Tübingen
Date	Monday, 20th of November 2023
Time	17h45
VENUE	Auditorium of Geological Survey (Ministry of Mines – Reception)

Abstract:

INTERACTION AND TEXTURAL VARIETY OF CARBONATITES AND ALKALINE SILICATE ROCKS FROM ONDURAKORUME (NW NAMIBIA)

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Carbonatites are mantle-derived igneous rocks which may comprise economically important mineralizations of REE and HFSE. Their emplacement into the crust is usually accompanied by fenitization, alkali metasomatism of country rocks caused by fluids expelled during cooling and crystallization. Often, carbonatites are associated with diverse silicate rocks like syenites, nepheline syenites or phonolites. Understanding magmatic differentiation and late-stage processes after emplacement such as hydrothermal alteration and element remobilization and re-precipitation is of great importance to understand the formation of HFSE and especially REE deposits.

Carbonatites and associated silicate rocks (syenites, phonolites, fenites) of the Kalkfeld group in Northern Namibia show a large range in whole-rock REE contents, heterogeneity and textural variety and are therefore perfectly suited to study the phenomena named above. Detailed petrographic and microtextural analysis of the samples was done and focused on understanding the paragenetic sequence and evolution of the samples. Within the carbonatites, the typical sequence sövite -> beforosite -> ferrocarbonatite is observed, as well as late-stage, hydrothermal mineralization of REE-bearing phases like ancylite and bastnäsite. Currently, the study focuses on mineral chemistry by means of EMPA to further differentiate processes involved in the formation and evolution of the observed assemblages. Furthermore, silicate minerals like pyroxene, biotite and feldspar observed in carbonatites of the Kalkfeld group may indicate wall-rock interaction and crustal contamination of the carbonatitic magma during ascent and emplacement. The importance of silica contamination on REE enrichment in the carbonatites of the Kalkfeld group will be discussed.

