Kolloquium:

**Magnetic anisotropy: from single crystals to tectonic interpretations**

**Date:** Monday, 04 March 2019, 16:15

**Location:** Institut für Geologie, Baltzerstrasse 3, 3012 Bern,
Studer Auditorium, 2.OG

**Speaker:** Prof. Andrea Biedermann
Universität Bern, Switzerland

The magnetic properties of most minerals show a directional dependence. Consequently, as soon as minerals are preferentially aligned in a rock, the rock will display magnetic anisotropy. This anisotropy, the so-called magnetic fabric, is a proxy for texture, and is more time- and cost-efficient than direct texture measurements. In tectonic, geodynamic or structural studies, magnetic fabric measurements are used to provide information on emplacement of igneous rocks, sedimentary transport, or deformation of metamorphic rocks.

Traditionally, magnetic fabrics have been interpreted based on empirical relationships between anisotropy and strain. Recently, single crystal magnetic properties of many rock-forming minerals have been characterized, and it is now possible to interpret magnetic fabrics in a quantitative way. This, in turn, leads to more robust tectonic interpretations of magnetic fabric data.

In this presentation, I will show how we can use magnetic fabrics for tectonic interpretations, as well as models based on textures and single crystal properties.