



## **Internal fabrics in magmatic plutons emplaced in extended brittle crust – insight from analogue models with AMS (Anisotropy of Magnetic Susceptibility)**

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Magma emplacement in extended brittle crust was simulated by injecting plaster of Paris (magma) into a large sandbox with central deformable rubber sheet. Analog magma is during the experiments injected through small circular inlet cut in the center of the elastic sheet. Injection force oscillation during the steadily evacuating analog magma was recorded during the experiments and regularly showed 3-4 increases followed by a quick drop. The recorded oscillation amplitude is largest for static injection without extension of the sandbox, which formed a columnar body with concentric and zonal internal fabric. Experiments including normal or oblique 20% extension resulted in along rift axis elongated oblate ellipsoidal pluton with rift parallel ridges in the top part of the pluton. Inspection of horizontal profiles show bone-shaped internal zoning patterns limited by conjugate sets of shear zones. Orientation of these internal shear zones is correlated with the sand-clock fault pattern developed in the overburden sand pack. Another set of shear zones parallel with the long axes of the plutons (rift axis) are associated with successive emplacement of distinct plaster pulses during the buildup of the entire body. The innermost lastly emplaced pulses of plaster display weak vertical magnetic fabrics with vertical lineations, while the outer shells of already emplaced plaster reveal stronger and margin parallel oblate magnetic fabrics with subhorizontal lineations. We interpret the vertical innermost fabrics as a result of active ascent of plaster from the injection inlet, while the fabrics in the outer zones likely reflect push due to inflation of the inner domain reflected in the reworking of the magnetic fabric.