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## Implication of Mesoproterozoic (~1.4 Ga) magmatism within Sette-Daban (Southeast Siberia)

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Numerous Mesoproterozoic mafic dyke swarms are known in Siberia. The main intrusions are concentrated in the northern part of the platform and in Sette-Daban (southeastern part of Siberia), and single intrusions are known on all the outcrops of the crystalline basement in the southern part. The largest dyke swarms are located on the Anabar shield and Sette-Daban (with ~1500 Ma and 1000-950 Ma, respectively [1,2]). In the period 1400-1300 Ma, single intrusions are known:  $1382 \pm 2$  Ma [3] on the Anabar shield,  $1385 \pm 30$  Ma [4] on the Udzha uplift, Listvyanka and Goloustnaya dykes in the south of the platform –  $1350 \pm 6$  Ma [5] and  $1338 \pm 3$  Ma [6], respectively. Also, there is the north-trending dolerite dyke at Sette-Daban, which cuts the Lower Riphean sediments of the Uchur Group. The age of this dike was estimated as  $1339 \pm 59$  Ma employing Sm-Nd isochrone [7]. We report here a new U-Pb age on apatite, Nd isotopy, and geochemistry for this dolerite dyke.

A typical apatite grain used for the U-Pb dating. On the Tera-Wasserburg diagram, the regression line intercepts in the lower part the concordia line at  $1419 \pm 15$  Ma. The chemical composition of this dyke corresponds to subalkaline basalts ( $\text{SiO}_2 = 45.6$ ,  $\text{Na}_2\text{O} + \text{K}_2\text{O} = 3.9$  wt%). The rocks correspond ( $\text{Mg}\# = 61$ ) to the calc-alkaline series ( $\text{FeO}^*/\text{MgO} = 1.1$ ) with a low content of  $\text{TiO}_2$  (1.25 wt %). A clear negative Nb-Ta anomaly on the multielement diagram suggests an IAB affinity. Incompatible element ratios such as Th/Yb, Nb/Th, Nb/Yb, Zr/Nb also suggest that these dolerites are close to arc-related basalts in composition.  $\text{Eps}(\text{Nd})$  calculated to the initial value at 1400 Ma shows a slightly negative value -0.2, which is considered as mantle source with contribution from the enriched source.

Geochemical and Nd isotopy characteristics show the affinity of the Sette-Daban dyke with low-Ti series of the Phanerozoic flood basalt provinces (e.g. Karoo, Siberian traps, etc. [8,9]) with the suggestion that these dolerites were generated from a metasomatized subcontinental lithospheric mantle source. Assuming geochemical characteristics and new U-Pb age of the dolerite we propose flood basalt province in the southeast Siberia in Mesoproterozoic (~1400 Ma).

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