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**Lithofacies analysis of a Palaeoproterozoic (2.06 Ga) silicic large igneous province dominated by lava-like, rheomorphic ignimbrites – the Rooiberg Group, Kaapvaal Craton, South Africa.**

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**Abstract**

The 2.06 Ga Rooiberg Group [1] of South Africa, related to the greater Bushveld complex forming event, is one of the unique silicic large igneous provinces (SLIPs) of the Precambrian rock record. Despite extensive geochemical work that has been carried out on the voluminous silicic volcanic and intercalated sedimentary rocks, so far, a clear interpretation of the eruptional, transport and depositional mechanisms is still missing.

In the Loskop Dam area (Mpumalanga Province), ca. 120 km E of Pretoria, upper three of the four formations (Dullstroom, Damwal, Kwaggansnek and Schrikkloof) can be encountered in the field. After extensive mapping in this area, a lithofacies analysis was initiated for the first time in order to provide a properly constrained and detailed set of the lithofacies types that can be observed within the Rooiberg Group.

So far and within the scope of the study area, seven lithofacies types could be identified that can be grouped into syn-eruptive and inter-eruptive lithofacies associations, representing times of explosive and possibly minor effusive eruptions and times of relative quiescence and clastic sedimentation. New results in the context of this study show that the majority of the dacitic to rhyolitic rocks at Loskop Dam that have formerly been described as lavas, now have to be regarded as high-grade, lava-like rheomorphic ignimbrites. The ignimbrites probably formed as part of a continuum from particulate flows to spatter-fed lava flows, and are the result of weak explosive eruptions and low eruption columns, probably originating from fissure eruptions that may have been related to one or more calderas.

*References:*

[1] Walraven F (1997) Economic Geology Research Unit, University of the Witwatersrand, South Africa. 97: 316.

