Geochemistry of a reconstructed 1110 Ma LIP (Kalahari, Dronning Maud Land, Congo, Indian & Amazonian cratons)

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1110 Ma LIP fragments are present in the: Kalahari craton, S. Africa (Umkondo LIP); Dronning Maud Land, Antarctica; Bundelkhand portion, Indian craton (Mahoba dykes); Congo craton (GN/Huila and Epembe dykes and sills); and Amazonia (Rincon del Tigre-Huanchaca LIP) [1-5]. These have been reconstructed as a single LIP [1,2] with plume centre beneath the Kalahari craton. A geochemistry-isotopic study was undertaken to test source and plumbing system models in a plume context (cf. [6]), and also the link with coeval kimberlites in the eastern Indian craton [7,8].

The mafic magmatism is tholeiitic, generated over a range of range of mantle melting depths, $(Gd/Yb)_N$ =1.1 to 3.0, and exhibiting low to high crustal component contamination (negative Nb anomalies, eNd (0 to -12), and elevated Th/Yb). Provisionally, two geochemistry groups are identified: Group 1 (mainly Indian, Amazonia and Dronning Maud Land cratons): low TiO_2, (<1/3%), MgO and Ni reaching to 7.5% and 120 ppm, respectively. Group 2 (mainly Kalahari and Congo cratons): both low and high Ti types, MgO and Ni values reaching up to 12% and 600 ppm, respectively & melting over a greater depth range, all consistent with proximity to the plume centre [1,2]. Group 2 data are broadly consistent with proximity to the plume centre region and Group 1 data are more distal.

[1] Ernst et al. (2013) *Precam. Res.,* **230**, 103-118. [2] De Kock et al. (2014) *Precam. Res.* **249**, 129-143. [3] Pradhan et al. (2012) *Precam. Res.* **198-199**, 51-76. [4] Teixeira et al. (2015) *Precam. Res.* **265**, 273-285. [5] Moabi et al. (2017) in *GSL Spec. Pub*. **457**, 61-85. [6] Blanchard et al. (2017) *Can. J. Earth Sci*. **54**, 290-310. [7] Chalapathi Rao et al. (2013) *Chem. Geol.* **353**, 48-64. [8] Gregory et al. (2006) *Prec. Res.* **149**, 65-75.