Kimberlites: Keys for understanding the Geodynamic evolution of ancient cratons

Of all the magmas which erupt on the Earth’s surface, those of the kimberlites are the deepest (>150 km) mantle-derived, of relatively small-volume, and are extremely rare in geological records. These magmas, during their ascent, may also entrain a variety of crustal- and mantle- xenoliths, including diamonds. Therefore, rare and exotic rocks such as kimberlites provide direct information about the composition of the continental lithosphere and serve as ‘windows to the Earth’s mantle’. This talk concerns some of the recent research contributions made by this speaker, vis-a-vis a study of kimberlites, from the Indian cratons. Various aspects such as (i) original spatial extent of the Purana (Proterozoic) sedimentary basins, (ii) origin of the Deccan Flood basalts, (iii) lithospheric thickness of the Indian shield and (iv) mass extinctions at the K-Pg boundary would be presented.