# Age and tectonic implications of Paleoproterozoic Deo Khe Granitoids within the Phan Si Pan Zone, Vietnam

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We report the first U–Pb zircon ages of 1855–1873 Ma for the Deo Khe Granitoids (DKG) in the Phan Si Pan Zone (PSPZ) of northern Vietnam. The DKG are medium-grained two-mica granitoids predominantly composed of quartz, K-feldspar, and muscovite. Trace element analyses indicate that the DKG are enriched in large ion lithophile elements but depleted in high field strength elements. Zircons from the granitoids have negative eHf(t) values ranging from _23.6 to _17.5. The magmatic zircons from the DKG have single-stage Hf model ages (TDM1) that range from 3.3 to 2.8 Ga and their eHf(t) data all plot well below the evolution trend of 2800 Ma average juvenile mantle. Observed Hf model ages are contemporaneous with the emplacement of 2.90–2.84 Ga tonalite–trondhjemite–granodiorite (TTG) gneiss observed in a nearby Ca Vinh Complex, suggesting that PSPZ in northern Vietnam is a product of partial melting of Archean crust. A sequence of similar tectonic events including initial emplacement of TTG protolith at 2.8–2.9 Ga, metamorphic development of TTG gneiss at 1.9–2.0 Ga, and magmatic activity at 1.8– 2.0 Ga are now recognized both in northern Vietnam and Yangtze block which we interpret to indicate basement rocks in northern Vietnam are similar to those found along southern China