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## **Tale of crustal evolution of western Dharwar craton in Paleo-to-Meso Archean time: Insights from trace elemental composition of detrital zircons of some selected quartzite units.**

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Despite the influence of several extrinsic parameters that inhibits the use of trace element composition of detrital zircon grains in inferring their host rocks, workers had overcome many related problems and particularly constrained zircon/bulk rock partition co-efficient at least for different granitoids, for example. Based on these kind of progress and few other fundamental works, we have tried to apply trace element composition of detrital zircon grains retrieved from some basal quartz pebble conglomerate units and orthoquartzites of Dharwar craton in studying the crustal evolution pattern of this craton, specifically in terms of its changing crustal thickness with time. In this study, after categorising the pristine zircon grains identified by their  $La > 1$ ,  $Pr > 1$  and  $LREE-I < 30$  values, the values of their LREE/HREE ratio (measured by their Lu/Nd ratio) are used to infer the temporal variation of crustal thickness within this craton. Here, the zircon grains show depressed values of LREE/HREE ratio manifested in their higher Lu/Nd ratio which possibly attests the absence of thicker continental crust in Dharwar craton between 3.4-3.1 Ga. We would also try to establish our observation regarding the secular evolution of crustal thickness of Dharwar craton with the help of other bivariate plots using the other trace elemental proxies. Our result stand in contradiction with the finding of other workers who, with the help of geophysical parameters, inferred the greater thickness of continental crust attested in WDC within the said time frame