A comparative study of two- versus three-sequence multidynamic modes for ^{142}Nd analyses by TIMS

IKSHU GAUTAM[1]* , J.S.RAY[1]

[1]Physical Research Laboratory, Geosciences Division, Ahmedabad, India (*ikshu@prl.res.in)

Alkaline rocks from Khariar(India) were reported to possess ^{142}Nd anomaly as low as -13 ppm [1], which was subsequently questioned [2].The latter study [2] was based on a 2-sequence multidynamic analysis on TIMS, of same samples, corrected for mass dependent fractionation using exponential law only, whereas the previous study had used power law normalized exponential law[1]. We revisited the issue by analyzing new samples from the same locations from Khariar using both the methods. In addition, we also used a simple exponential fractionation law to correct our 3-sequence data. The results of our study not only confirm the observations made by Roth et al. [2] but also reveal that a simple exponential fractionation law correction to the 3-sequence data would yield similar result. This would mean that the data generated in a 3-sequence analysis need not be corrected for relative fractionation rate as prescibed in [2].

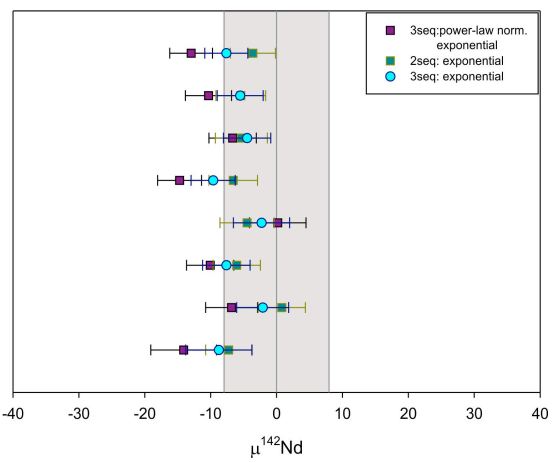

Fig.1 μ^{142}Nd of alkaline rocks from Khariar relative to Ames Nd standard (^{142} Nd/^{144}Nd = 1.1418373 with 2RSD= 7.97; n=78)

[1] Upadhyay *et. al.* (2009) *Nature* **459**, 1118-1121.
[2] Roth *et. al.* (2014) *Chemical Geology* **386**, 238-248.