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First Report on Pb Isotope Composition of Dust Storms Particles in Khuzestan Province: Concerning on Source and Geo-Environmental Characteristics

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Abstract: Recently Khuzestan province in southwest of Iran is affected by dust storm phenomena. This feature makes some problem in agriculture, transportation, communication and human health side effect in this province. In the lack of enough researches on physical and chemical characteristics of this dust storm in Iran, a systematic investigation on these matters is necessary. In addition of Geochemistry of particles, isotope studies are very useful for determination of particle source. In this way, 26 samples from dust storms in Khuzestan province were collected for ICP-MS analysis in order to determination of Pb isotopes. These study show that average content of Pb in samples (10.95ppm) is higher than the standard and these isotopes show close relationship with $PM_{2.5}$ particles. The comparison of Pb isotope ratios $\left({}^{2o6}pb/{}^{204}pb, {}^{207}pb/{}^{204}pb, {}^{208}pb/{}^{204}pb, {}^{207}pb/{}^{206}pb\right)$ in the samples with upper crust show different source for particles. In general this study indicates that there is a different between the Pb isotopes ratios of the samples and natural sources. It can be result of anthropogenic activity such as oil industrial activities.

Keywords: *Dust storm; Environmental Geology; Pb Isotope; Khuzestan Province.*

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