SURVEY OF AEOLIAN AIRBORNE DUST OVER IRAN FROM THE POINT OF VIEW GEOCHEMISTRY AND MINERALOGY (CASE STUDY: WESTERN IRAN AND NORTH OF PERSIAN GULF AND SEA OF MOKRAN)

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This research aims to show the characteristics and particle-related pollution of massive dust storms reaching Iran and North of Persian Gulf and Sea of Mokran. Satellite images have shown that these Aeolian dust storms originate in Arabian countries in Middle East and North of Africa continent. We have conducted numbers of analysis to reveal the particle size analysis, SEM, XRD, and ICP-MS for the detection of the most important source areas with regard to radioactive, heavy and toxic trace elements. Analyses for pesticides were also performed by HPLC and microorganisms diffusion was evaluated. Result has revealed that the most dangerous source areas of dust storms reaching Iran are located in Iraq country and war implications by turns have the worst effect on Iraqi environment, natural resources and human health. Soon after dust storm, Iran country was affected by toxic, radioactive elements, pesticides and microorganisms (bacteria, fungus, viruses), which could be a source of human diseases and soil pollution, and negatively influence the forest and plant communities.

Keywords: geochemistry & mineralogy of dust, radioactive and trace elements of dust, Iran, Persian Gulf, Sea of Mokran