

<b>Program</b>	<b>Program NUCLEU PN 09 13 04 08</b>
<b>Project title (ENG):</b>	<b>Prediction methodology for pollution concentration wave using Rough Set Theory capabilities.</b>
<b>Project title (RO):</b>	<b>Metodologie de predictie a concentratiei unei de poluare folosind capabilitatile teoriei multimilor rugoase.</b>
<b>Duration</b>	2013-2014
<b>Team Leader</b>	Senior Research Eng. Georgeta Madalina Arama
<b>Summary</b> (short description) ENG	The project realized a prediction of pollution wave concentration using the Rough Set Theory capabilities realizing a conceptual model that establishes the dependencies that characterizes the relation “pollution source - pollution migration ways - targets” and its dynamics and establishes the attributes’ relevance for the purpose of predicting the pollution wave concentration and the management of the imperfect data. The methodology has been realized taking into account the updated legislation at the level of years 2013-2014 and has been applied/validated for a case study that has been using monitoring data with reference to the chemical indicators from INCD-ECOIND Bucharest within an interest section on the Olt river to verify the realized prediction using this methodology. The proposed methodology brings new a decision table with cert and transparent decision rules determined according to the current legislation that allows the prediction of pollution concentration wave and the environmental risk associated to it.
<b>Summary</b> (short description) RO	Proiectul a realizat o metodologie de predictie a concentratiei unei de poluare folosind capabilitatile teoriei multimilor rugoase. S-a realizat un model conceptual ce stabileste dependentele ce caracterizeaza relatia ” <i>sursa de poluare - cai de migrare poluanti - tinte</i> ” si dinamica ei precum si relevanta atributelor pentru scopul de predictie a unei de poluare si managementul datelor imperfecte. Metodologia a fost realizata tinand cont de legislatia actualizata la nivelul anului 2013 - 2014 si a fost aplicata/validata pentru un studiu de caz ce a folosit date de monitorizare a indicatorilor chimici INCD-ECOIND Bucuresti intr-o sectiune de interes de pe raul Olt pentru verificarea predictiei realizate prin aceasta metodologie. Metodologia propusa aduce nou un tabel de decizie cu reguli certe si transparente de decizie determinate conform legislatiei in vigoare ce permite predictia concentratiei unei de poluare si a riscului de mediu asociat ei.
<b>Dissemination of results</b>	
Full-paper ISI	G. M. <b>Arama</b> , L.F. Pascu, C. Lehr, “ <i>Prediction of the concentration of pollutants/wave in aquatic environment using rough set theory</i> ” Environmental Engineering and Management Journal – full paper, Accepted for publication March 2015.
Book, book chapters	G. M. <b>Arama</b> , L.F.Pascu, G.G, Vasile “ <i>Necesitatea validarii metodelor folosite in practica monitorizarilor poluantilor si a evaluarii starii de poluare a mediului – aspecte de interes practic</i> ” Editura Estfalia 2014 - ISBN: 978-606-8284-89-7
Conferences (platform, poster, abstract / full-paper	<b>Aramă, M.</b> , Nicolau, M.,Batrancescu, Gh, Lehr, C, Criste V., Anghel A., ” <i>Rough Set Theory a promising instrument for diagnosis and prediction including pollution phenomena</i> ” full paper, Proceedings at The International Symposium Environment and Industry, Bucharest, 29-30 October, 2013, vol. II, 85-91, Estfalia, Bucharest, ISSN:1843-5831.