

4th Annual Report

Summary

The main objective of this reporting period was to promote, integrate and ensure the sustainability of Romanian research capacities as part of the European research infrastructure for atmospheric remote sensing. In this sense, the Romanian potential was promoted by signing collaboration agreements for ACTRIS-RO and IAGOS-RO. Also, a GMES workshop session, entitled “Romanian projects and initiatives in support of ESA’s Earth Observation Envelope Programme” was organized at INOE, on November 3rd 2014. At this event, 24 scientific papers were published.

Project partners participated at 12 international conferences where the activities and results of the research teams were presented. The researchers involved in this project participated at the following prestigious events:

- ESA Sentinel-5 Precursor Validation Team (S5PVT) Workshop ESA-ESTEC, Noordwijk, Netherlands, organized in the period 29 September -1 October 2015;
- European Geophysical Union Congress, Vienna, Austria, in the period 12-19 April 2015
- 27th International Laser Radar Conference, New York, 5-10 July 2015
- European Aerosol Conference, Milan, 6-9 September 2015
- PANDONIA- ground-based remote sensing network of PANDORA spectrometer International Workshop, Innsbruck/Mitters, 7-11 January 2015
- Environment & Progress International Symposium, Cluj, 29-30 October 2015
- Romanian Projects and Initiatives in Support of ESA’s Earth Observation Envelope Programme International Workshop, Magurele, 3 2015

In addition, INCAS partner participated to the 2015 Romanian Research Convention, where they presented their most recent research results and major projects, including CAPESA project.

The following papers have been published in ISI indexed journals:

- Nemuc, A., Vasilescu, J., Talianu, C., Belegante, L., and Nicolae, D.: Assessment of aerosol's mass concentrations from measured linear particle depolarization ratio (vertically resolved) and simulations, *Atmos. Meas. Tech.*, 6, 3243-3255, doi:10.5194/amt-6-3243-2013, 2013.
- S. Samaras, D. Nicolae, C. Bockmann, J. Vasilescu, I. Biniotoglou, L. Labzovskii, F. Toanca, A. Papayannis, Using Raman-lidar-based regularized microphysical retrievals and Aerosol Mass Spectrometer measurements for the characterization of biomass burning aerosols, *J COMPUT PHYS*, vol. 299, pp. 156-174, 10.1016/j.jcp.2015.06.045, 2015
- Jeni Vasilescu, Luminita Marmureanu, Anca Nemuc, Doina Nicolae, Camelia Talianu, Seasonal Variation Of The Aerosol Chemical Composition In A Romanian Peri-Urban Area, *Environmental Engineering and Management Journal*, http://omicron.ch.tuiasi.ro/EEMJ/pdfs/accepted/301_484_Vasilescu_12.pdf

Also, the following book has been published:

- Nicolae D., “Romanian Projects And Initiatives In Support Of ESA’s Earth Observation Envelope Programme”, 3 noiembrie 2015, editura Tehnopress

In order to increase the Romanian capacity to contribute to GMES, a common research program for the following 10 years has been elaborated, with measures that will lead to the

increase of research infrastructure able to satisfy ESA requirements. By elaborating and implementing collaborative projects (with prestigious European institutions) the human resource will be strengthened, which will then be capable to cope with the expertise demand for European and GMES infrastructure. The research projects in collaboration with economic agents will find new ways of technological and knowledge transfer, leading to the increase of services volume offered by ESA and to the increase of publications and patents.

In the period 17-31 August 2015 we participated at the international measurement campaign AROMAT-2, which was undertaken in Romania (Bucharesti and Turceni). The campaign aimed to prepare the validation programme for the future ESA satellites, in particular for Tropomi-S5p, by testing state-of-the-art airborne equipment (simultaneously with ground based equipment) in order to detect NO_2 , SO_2 and CH_2O , and aerosols.

Finally, the project website has been updated with the results obtained during this project period.