

SESSION 1.9 - REMOTE SENSING MODELS AND METHODS TO SUPPORT SUSTAINABLE DEVELOPMENT AND DISASTER MANAGEMENT A

Invited speech - SPACEBORNE SYNTHETIC APERTURE RADARS FOR THE NEXT DECADE

One decade, too long a time frame to provide reasonable expectations in almost all fields of Science. In almost all areas of science and technology, the predictions of scientists and technologists over the next decade are generally unattractive and will probably only come about marginally. Predicting what will happen in the next decade is in fact very often linked to phenomena external to the scientific world that often imply reflections on human relationships and require a good dose of creativity: until the foretelling becomes a matter of science fiction and human sciences experts.

I believe this is not the case with Earth observation through SAR technologies. The new generation of Synthetic Aperture Radar (SAR) sensors that will operate in the next decade is already in the designing and planning phase. Already now, we almost know the specifications of the upcoming space platforms, which together with the new configurations and operating modes will increase the flexibility of SAR sensors to obtain even multidimensional images and data, in a wide range of resolutions and coverages both in space and time. We can even anticipate the availability of open and free SAR data relevant to the entire Globe, as well as software tools addressing the fundamentals of SAR processing and hardware structures to implement them. Hence, forecasting scientific results that take advantage of technological issues should seem reasonable. However, this unprecedented development in SAR technologies requires the definition of new models, algorithms, techniques and tools for the exploitation, evaluation and validation of SAR data. The forecast results in these areas are still almost unpredictable since these latter activities are mainly related to human creativity and inventions. Predicting the human contribution to expected technological results is an intriguing and open problem that can provide ideas on actual advances in Sciences.

I think it is worth discussing about that at the conference.

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