



The Eyjafjallajökull volcanic eruption from the MACC perspective

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The recent eruption of the Eyjafjallajökull volcano on Iceland triggered a strong response from many modelling and observation groups around Europe. MACC (Monitoring Atmospheric Composition and Climate) is building the atmospheric component of Europe's GMES (Global Monitoring for Environment and Security) initiative and has used its pre-operational global assimilation and forecasting system to provide simulations of the development of the volcanic ash plume. Some basic assumptions were made about the height of the injection and the life time of the tracer. These simulations have been provided on a daily basis on the MACC web site. At the same time MACC has also tried to gather relevant observations on top of those that are already assimilated in the pre-operational system. This will allow validation of our plume forecasts as well as assessment of the potential of assimilating these additional observations. The main aim now is to further develop the MACC system to a stage where it can adequately respond to similar events in the future when GMES becomes operational. MACC will then be able to offer support to the official Volcanic Ash Advisory Centres in their task of advising the aviation authorities.

In this presentation we will present our plume simulations as well as some initial validation. We will also present some preliminary data assimilation experiments to show the potential and difficulties of data assimilation in case of volcanic eruptions. Finally, we will try to make a first assessment of what is needed in the near future in terms of model development and observations to be fully prepared for events like the eruption of the Eyjafjallajökull volcano.