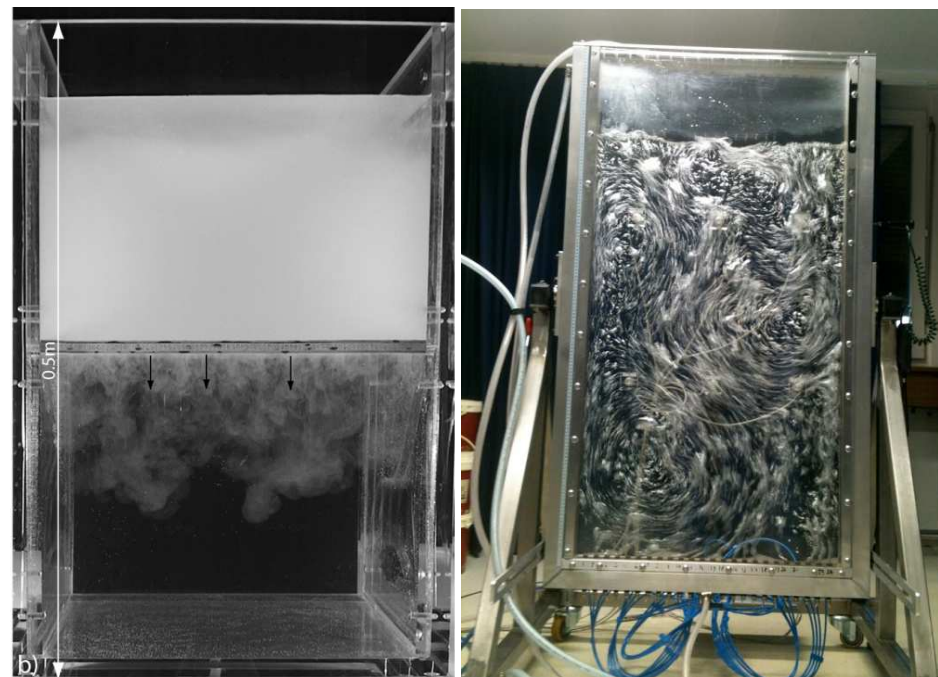# University of Geneva - UNIGE

Unit of volcanology and geological risk

Research:

➢ Physical volcanology

➢ Characterization of tephra deposits and sedimentation

➢ Particle characterization (e.g., size, textures, morphology)

➢ Experimental volcanology for particle sedimentation, granular flows and magma degassing

➢ Modelling of tephra dispersal

➢ Probabilistic hazard assessments

➢ Vulnerability and risk assessments

Teaching and training:

➢ Postgraduate specialization certificate in geological and climate related risk (CERG-C)
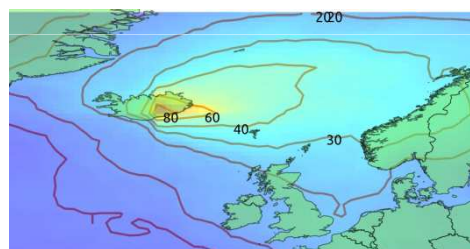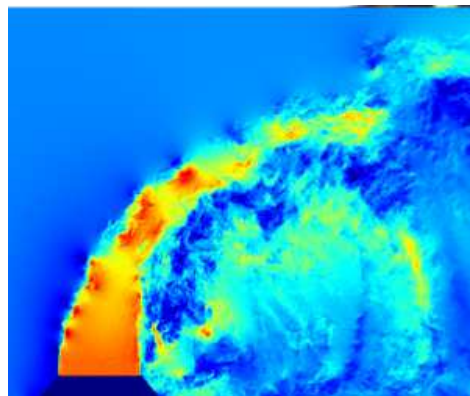
➢ Master in geological risk

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ONGOING PROJECTS

Fond National Swiss related projects:

➤ Lattice-Boltzmann jet and plume modelling for validation of infrasonic signal (collaboration with UNIFI)

➤ Hazard and vulnerability assessment of tephra fallout associated with Hekla, Askja and Eyjafjallajökull , including compilation of hazard maps for both ground load (using TEPHRA2) and atmospheric concentration (using FALL3D) (collaboration with UI and BSC)

➤ Experimental investigations of settling velocity and aggregation of volcanic particles (vertical wind tunnel)

European projects and networks:

➤ MeMoVolc ESF research network - Measuring and Modelling Volcano Eruption Dyamics 2011-2016

➤ NEMOH FP7 Initial Training Network - Numerical, Experimental and stochastic Modelling of vOlcanic processes and Hazard 2012-2016

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FUTUREVOLC

<u>WORK PACKAGE 4</u> *Evaluation of known ESP*

➤ MS27 Probability density functions of ESP for selected key volcanoes included in the Catalogue (month 18)

<u>WORK PACKAGE 7</u> *Determination and evolution of ESP*

➤ D7.3 Tephra detector (month 14) (leader: ITEM)

➤ D7.5 Grainsize distribution analysis from the tephra fallout instrument system in real time (month 36) (leader: ITEM)

➤ MS65 Prototype of the tephra fallout detector completed, measuring apparent TGSD and fallout rate (month 18) (leader: ITEM)

➤ MS75 A netrwork of 10 tephra fallout detectors deployed in the field (month 30) (leader: ITEM)

<u>WORK PACKAGE 8</u> *Distribution and description of eruptive products (UNIGE mainly involved in strategies for TGSD)*