This should emphasize the results of the visit in terms of improving the EPN2020 infrastructrure, activities or services. Please specify information exchanged, codes developed or improved during the visit, database developments/updates, hardware improvements or any other results from the visit.

Our recently published work has highlighted that the impact of liquid water on the morphology of Mars and Earth are radically different (Massé et al., Nature Geoscience 2016). Experimental studies of water flows interacting with sediment under low martian pressure are still at the exploratory phase, so I add (with the help of Manish Patel) a new installation to the Mars Chamber at the Open University in order to improve its capability to study such flows. This installation enables "debris flow" mixtures of sediment and water to be prepared and released in a controlled way, rather than relying on the ad-hoc creation of such mixtures via entrainment. This new installation allows the control of the sediment-water mix, which was not previously possible. I have designed, built and tested the installation under terrestrial conditions (Lab GEOPS, Univ. Paris-Sud, France). This old installation includes: 3 sealable reservoirs (4,6,8 cm diameter) which are on a hinged-mount allowing its contents (for example liquid water and sand) to be mixed manually. The flow can then release onto the prepared surface using a trap-door. Under Earth condition all stages were hand-made. For the Mars chamber we have of to automate all the stages. We wanted to install a motor to mix the reservoir but we give up the idea: the mix is made manually before the close of the Mars Chamber and the low pressure.

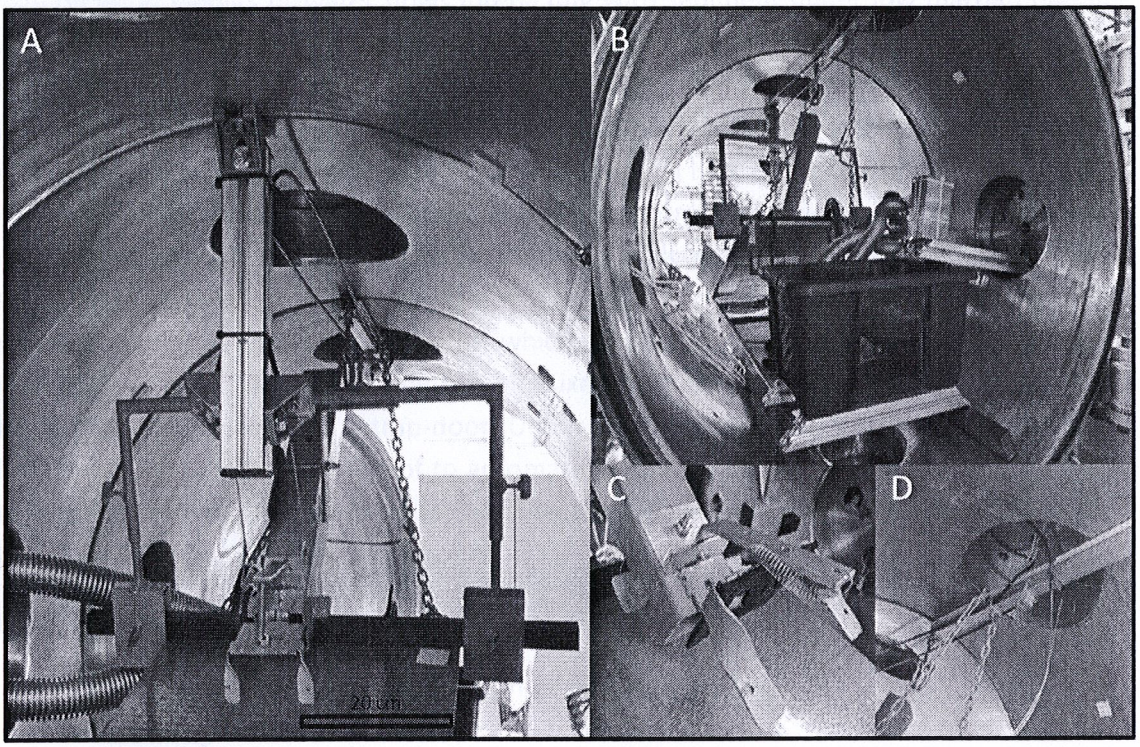
Finally the new installation includes:

- Adaptation of the reservoir fixation to the inclined plane
- Unlocking of the remote door
- Opening of the remote door

1) Adaptation of the reservoir fixation to the inclined plane. Fixation for the cold room in Orsay was too large and not adapted without edge for the inclined plan of the Mars Chamber. For this we added an iron bar perpendicularly of the plan, fixed on the existing material and clamped in the back of the inclined plan.
2) Unlocking of the remote door. On the cold room in Orsay, the reservoir was opened manually in get out two pins which close the reservoir door. Here we wanted something to unlock of the remote door. We tested this with two electro-magnetic motor, but there were not enough strong to put off pins. Instead we used a system of cables and counterweights. Two bars were installed on the top of the Mars Chamber to guide cable on at the bottom of the chamber (where weights are present).
   Weights (2 X 2kg) are push manually by a handle installed on the side of the chamber and connected to an iron bar. They fall in a pail filled with sand. The low part of the pail was strengthened with an iron plate to support the weight.
3) Opening of the remote door. After unlocking the door of the reservoir it's important to open really quickly the door, if not sand and water will not flow correctly. For this

we fixed a spring between the lower part and the door of the reservoir. We made that the door comes to be stuck when it open for the first time.

Now the Mars chamber at the Open University is equipped of a sand/water sealable reservoir, opening of the remote. This adaptation was not made without problem: realization which does not work, awaiting for new material...7 days were necessary to adapt and install this equipment.



A) Reservoir installation face to the flow; B) Back of the Mars Chamber with counterweights installation; C) Opening of the door with spring; D) Fixation bar for the counterweights.