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# 国台学术报告 NAOC COLLOQUIUM

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**Time: Thursday 2:30 PM, Oct. 20**      **Location: A601 NAOC**

## **The Magellanic Stream: two ram-pressure tails and the relics of the collision between the Magellanic Clouds**

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Prof. Francois Hammer is currently co-director of the International Associated Laboratory Origins. He has been exceptional class astronomer of Paris Observatory since 2011. He won prize Descartes-Huyghens from the French and Netherlands Academies of Sciences in 2012, and won Premio Internazionale Cartagine in 2011. He was principal investigator of OPTIMOS-EVE, and also has been the principal investigator of MOSAIC, which is the multi-object spectrograph of the European ELT. Also, during the 8 years from 2002 to 2010, he was director of the Galaxies, Etoiles, Physique & Instrumentation (GEPI) laboratory at the Paris Observatory, and in the next four years, he was secretary and then the president of the scientific council of INSU/CNRS.

### **Abstract**

We have analysed the Magellanic Stream (MS) using GASS, which is the deepest and the most resolved HI survey of the Southern Hemisphere. The Stream is structured into two filaments suggesting two ram-pressure tails lagging behind the Magellanic Clouds (MCs). The past motions of the Clouds appear imprinted in them, implying almost parallel initial orbits, and then a radical change after their passage near the N(HI) peak of the MS. This is consistent with a recent collision between the MCs, 200-300 Myr ago, which has stripped further their gas into small clouds, spreading them out along a gigantic bow-shock, perpendicular to the MS. The corresponding hydrodynamical modeling of the 'ram-pressure plus MC collision' scenario provides the currently most accurate reproduction of the whole HI Stream morphology, of its velocity, and column density profile. The Leading Arm could be caused by the successive passage of leading, small dwarfs having lost their gas from ram-pressure followed by the far more massive Magellanic Clouds. Consequences to the nature and origin of the Magellanic Clouds and dSph are discussed.

*All are welcome! Tea, coffee, biscuits will be served at 2:15 PM.*