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Type: **Oral presentation**

## **The necessity of a large-scale turbulent driving to regulate star formation in massive galaxies**

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The Schmidt-Kennicutt law links the star formation rate (SFR) of a galaxy or its subregions to the contained amount of gas, and remains true for a wide range of galaxies and redshifts. Understanding its origin is crucial to improve our knowledge of the star formation process. One main question is to determine which are the processes responsible of the regulation of the star formation rate, which would be much higher if only the self-gravity of the gas was at play.

In this talk I will present the results of simulations of a kiloparsec cube section of massive galaxies featuring different kinds of feedbacks, such as the formation of HII regions, the explosion of supernovae, and the emission of UV. We will see that such feedbacks are not sufficient to quench star formation to the level of the observed rates but that an additional injection of turbulent energy from large scale structure is able to reduce the SFR to a more reasonable level.

### **Field**

InterStellar Medium

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