

# **Cosmological Star Formation at High Redshift, Gamma-ray bursts, Reionization and Cosmic Chemical Evolution**

Elisabeth Vangioni

*Institut d'Astrophysique de Paris  
CNRS France*

Recent optical observations and Gamma-ray burst rate determinations have led to significant progress in establishing the star formation rate (SFR) at high redshift.

The SFR in turn is used to predict the ionization history of the Universe (using last results from CMB WMAP mission), the cosmic chemical abundances, and supernova rates. These predictions are done using a hierarchical model for structure formation (Press & Schechter).