



Département d'Astrophysique

Séminaires du DAp

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Bat 713, salle de séminaires Galilée , CEA Saclay, Orme des Merisiers

**E. ROSSI**

Leiden Univ., Leiden, Pays-Bas

## **THE EARLY ASSEMBLY OF SUPERMASSIVE BLACKHOLE**

Supermassive black holes seem to be ubiquitous in galaxies. But How did they form? In this talk, I will review the main current channels for supermassive black hole seed formation, with particular focus on the mass estimates. These estimates, based on theoretical models and numerical simulations, remain quite uncertain, but there has been a trend toward lower values in recent works. New merger tree calculations are needed to understand if this is worrisome to account for bright quasars at  $z > 6$ . Certainly, we cannot relax the requirement of very efficient growth at early stages.

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