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## Formation of the First Galaxies

*Wednesday 10 November 2010 14:00 (20 minutes)*

The first stars are thought to be extremely luminous and reside in dark matter halos with masses of approximately a million solar masses. I will present results from radiation hydrodynamics simulations that follow the formation of tens of metal-free stars and their impact on high-redshift galaxy formation and reionization. HII regions created by the first stars are a few kiloparsecs in radius, which then overlap with each other and constitute a volume filling fraction of about a quarter at redshift 15. We also find that the first galaxies are enriched up to 1/1000th of solar metallicity, which is sufficient to transition to lower-mass star formation. I will finish by presenting new results that self-consistently follow the transition from Pop III to II star formation for the first time.

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