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A hydrodynamical simulation of the Virgo cluster of galaxies

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At about 15 Mpc from us, the Virgo cluster of galaxies is a formidable source of information to study cluster formation and galaxy evolution in this rich environment. Several observationally-based scenarios for the cluster formation arose within the past decade regarding the number and properties of the galaxies that entered the cluster recently and the nature of the last major merger that the cluster underwent. Confirming these scenarios requires extremely faithful numerical counterparts of the cluster. I will present the first zoom-in cosmological hydrodynamical simulation, with feedback from supernovae and active galactic nuclei, within a 10 Mpc/h radius sphere, with a dark matter mass resolution of 2x1e+7 Msun/h and a spatial resolution down to 0.24 kpc/h, that reproduces the Virgo cluster within its large scale environment.

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