PROCEEDINGS OF SCIENCE

Strong and weak lensing united: the cluster mass distribution of the most X-ray luminous cluster RXJ1347-1145

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Weak and strong gravitational lensing are considered to be one of the most powerful tools to study the mass and the mass distribution of galaxy clusters. Present day applications have been limitted to the inner parts of the clusters for the strong lensing and outer ones for the weak lensing studies. In my talk I will present a novel method for a cluster mass reconstruction, which combines weak and strong lensing information on common scales and can as a consequence very efficiently reconstruct the cluster mass. We extend the weak lensing formalism to the inner parts of the cluster, use redshift information of background sources and combine these with the constraints from multiple image systems. We apply the method to N-body simulations as well as to strong and weak lensing ground-based multi-colour data of RXJ1347-1145, the most X-ray luminous cluster known to date.

BDMH 2004 – Baryons in Dark Matter Halos
5–9 October 2004
Novigrad (Croatia)

Published by SISSA

http://pos.sissa.it