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A new Paradigm and new Scenarios for the Dark Matter Phenomenon.

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The phenomenon of the Dark Matter baffles the researchers: the underlying dark particle has escaped so far the detection and its astrophysical role appears complex and unexpectedly related with that of the Standard Model (luminous) particles. We propose that, in order to act efficiently, alongside with abandoning the current ΛCDM scenario, we need also to shift the Paradigm from which such scenario has emerged. In detail, the simplicity, the usefulness in shedding light on some other well-known problem of fundamental physics, so as a strong degree of falsiability, a promising dark particle detectability in experiments and observations and the emergence of a new channel of investigation via Cosmological computer simulations, all cease, according to the new Paradigm, to be necessary features of the correct DM scenario. To get the latter, instead, we propose that highest priority should be given to the information coming from the entanglement between the dark and the luminous matter, observed in virialized systems like galaxies and clusters.

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