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Title:	Gravitational Collapse and Structure Formation in an Expanding Universe with Dark Energy
Authors:	Bagla, J.S. (/jspui/browse?type=author&value=Bagla%2C+J.S.)
Keywords:	Accelerating Collapse Exotic Cosmological
Issue Date:	2019
Publisher:	Springer Link
Citation:	Resonance, 24(09), pp. 977-993.
Abstract:	Observations show that the expansion of the Universe is accelerating. This requires that the dominant constituent of matter in the Universe has some unusual properties like negative pressure. This exotic component has been given the name dark energy. We work with the simplest model of dark energy, the cosmological constant introduced by Einstein. We study the evolution of spherical over-densities in such a model and show that there is a minimum over-density required for collapse; perturbations with a smaller amplitude do not collapse. This threshold is interesting as even perturbations with a positive over-density and negative energy do not collapse in finite time. Further, we show that perturbations with an amplitude larger than, but comparable to the threshold value, take a very long time to collapse. We compare the solutions with the case when dark energy is absent.
Description:	Only IISERM authors are available in the record.
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