

## Special Issue on Wave Descriptions of Dark Matter in the Universe

### Call for Papers

One of the most interesting alternative possibilities for the nature of dark matter to the most commonly studied WIMP model is the possibility that dark matter may have a wave nature. For example, there are both general relativity and quantum mechanical motivations for modeling dark matter by the Klein-Gordon equation, a wave type of equation for a scalar field.

In this special issue, we want to call for papers on the topic of wave descriptions of dark matter in the universe with an emphasis on scalar fields. More generally, any connections between wave types of equations and the large-scale structure of the universe will be appropriate for this issue.

While purely theoretical and purely observational papers will be seriously considered, papers that make or lay the groundwork for possible connections between theoretical models of dark matter and actual observations of the universe will be given priority. Potential topics include, but are not limited to:

- Scalar field compact objects
- Scalar field dark matter halos
- Structure formation considering the scalar field as dark matter
- Observational properties of Bose-Einstein condensates as dark matter halos
- Relation between classical and quantum description of the scalar field dark matter halos
- Similarities between the Bose-Einstein condensates as dark matter halos and as seen in the experiments
- Connections between wave theories of dark matter and astronomical observations
- Astronomical observations that have wave characteristics, such as the observed ripples in elliptical galaxies

Before submission authors should carefully read over the journal's Author Guidelines, which are located at <http://www.hindawi.com/journals/aa/guidelines/>. Prospective authors should submit an electronic copy of their complete manuscript through the journal Manuscript Tracking System at <http://mts.hindawi.com/> according to the following timetable:

Manuscript Due	Friday, 2 December 2011
First Round of Reviews	Friday, 2 March 2012
Publication Date	Friday, 1 June 2012

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