

# PhD Positions in Astrophysical Dynamos at Nordita

## NORDITA - The Nordic Institute for Theoretical Physics

NORDITA was founded in 1957 as a Nordic institute in theoretical (atomic) physics on the premises of the Niels Bohr Institute at Copenhagen University. It was decided in 2006 that NORDITA should be moved to Stockholm under the auspices of Stockholm University (SU) and the Royal Institute of Technology (KTH). NORDITA was established at the AlbaNova University Center, situated in the immediate vicinity of the two universities, on Jan. 1, 2007. Administratively, NORDITA is organized as a part of AlbaNova University Centre.

The European Research Council has decided to fund a concentrated 5-year effort at [Nordita](http://www.nordita.org/) in Stockholm through an [Advanced Grant of the European Research Council](http://www.nordita.org/~brandenb/AstroDyn/) to improve our understanding of astrophysical dynamos. For details, see the project page <http://www.nordita.org/~brandenb/AstroDyn/> on *Astrophysical Dynamos*. In connection with this 5-year project four PhD positions are announced with an expected starting date during the spring of 2009. Other positions announced in connection with the project can be found on <http://www.nordita.org/~brandenb/AstroDyn/positions/>.

The research in the group will focus on improving our understanding of the solar dynamo. This involves work on a number of topics including

- Turbulent dynamo action in spherical shells
- The formation of active regions, sunspots, and coronal mass ejections from dynamo-generated magnetic fields
- The ejection of dynamo-generated small-scale magnetic helicity in coronal mass ejections
- Magnetic helicity fluxes and turbulent transport coefficients in hydromagnetic turbulence.
- Dynamos from magneto-rotational and magnetic buoyancy instabilities
- Dynamos from deep convection with tachocline
- Solar cycle models and forecasts
- Applications to galactic and laboratory dynamos

The successful candidates will work under the supervision of Professor [Axel Brandenburg](http://www.nordita.org/~brandenb/) at [Nordita](http://www.nordita.org/). The PhD students working within this project will be formally enrolled at [Stockholm University](http://www.stockholm.se/) within the [Department of Astronomy](http://www.astronomy.su.se/), but they will have their offices in one of the Nordita buildings. An extension to a fifth year is possible if the student takes up teaching or other duties at the department. The positions start on 1 February 2009, or any other date to be agreed upon.

### Qualifications

Eligible for the PhD positions are applicants with a complete masters exam or similar, for example a Swedish exam in civil engineering.

### Employment

The PhD positions are supported for 4 years. The position will start on Feb 1st, 2009, or some other date agreed upon.

### Application

The applications should include a curriculum vitae together with a list of publications, 2 letters of recommendation, a verified list of courses with grades and a motivation why the applicant wants to pursue studies for a PhD at Nordita. The application deadline is December 10, 2008, and applications should be filed through our web interface <http://apps.nordita.org/>. In exceptional cases, you may also send your application via e-mail to [brandenb@nordita.org](mailto:brandenb@nordita.org), or send it to

[Axel Brandenburg](http://www.nordita.org/)

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