3.2 Quality and capacity of the host institutions and participating organisations, including hosting arrangements

3.2.1 Hosting arrangements: Nordita (Nordic Institute for Theoretical Physics), jointly operated by KTH Royal Institute of Technology and Stockholm University, has a strong record of supporting and training postdoctoral researchers, including MSCA fellows (see section 5). Renowned for its vibrant atmosphere, Nordita offers cutting-edge infrastructure and top-tier resources for high-quality research. It hosts numerous European and Nordic grants and fellowships and organizes high-level scientific programs, workshops, and long-term visitor activities year-round across all areas of theoretical physics, including astrophysics.

Nordita ensures excellent working conditions through its Work Environment Committee and a dedicated Equality, Diversity, and Inclusion (EDI) committee. It provides modern office space, administrative support, and access to powerful computational resources via the PDC Center for High Performance Computing and the National Academic Infrastructure for Supercomputing in Sweden (NAISS). Relocation, visa, and housing assistance are available through its administrative office.

With strong expertise in fluid dynamics and astrophysics, the host group and supervisor, Prof. Axel Brandenburg, are leaders in these fields. The researcher will be integrated into a collaborative environment featuring weekly group meetings and seminars on astrophysics and turbulence, fostering interaction and team cohesion. Prof. Brandenburg will offer expert mentorship and career guidance, providing access to an extensive academic network.

3.2.2 Quality and capacity of the participating organizations: My supervisor, the host group, and Nordita together create an exceptional setting for carrying out the proposed research. Nordita is internationally recognized for excellence in theoretical physics, consistently attracting prestigious European fellowships and grants, including MSCA and multiple ERC Advanced and Synergy Grants. This strong funding record reflects both scientific excellence and robust institutional support. Nordita's reputation is further elevated by its connection to Nobel laureates like Frank Wilczek and Ben Roy Mottelson, underscoring its tradition of high-impact, groundbreaking research. My supervisor, Prof. Axel Brandenburg, is a leading expert in astrophysical fluid dynamics. He received an ERC Advanced Grant in 2009 and is widely known for seminal work on turbulent dynamos, magnetic helicity, and the generation of cosmic magnetic fields. His expertise aligns closely with the project's goals (see Section 1.3) and will be essential for its success. Prof. Brandenburg leads an active, interdisciplinary group at Nordita, including senior and junior researchers working on solar physics, early universe dynamics, supernova turbulence, gravitational waves, cosmology, and high-energy astrophysics. Regular visits from top scientists—e.g., Igor Rogachevskii, expert on the chiral magnetic effect—further enrich the group's collaborative and intellectually stimulating environment. A key asset is the Pencil Code community. Prof. Brandenburg, along with Matthias Rheinhardt (numerical methods, Aalto University), Philippe Bourdin (Pencil Code expert), and Jennifer Schober (CME, University of Bonn), forms the core development team. Their combined expertise directly supports the computational demands of WP1 and WP3. Nordita also offers access to the PDC Dardel supercomputer—an HPE Cray EX system with CPU and GPU nodes totaling 1,278 nodes and 163,584 cores—ensuring the computational capacity needed for state-of-the-art simulations. As a researcher at Nordita, I will benefit from high-level theoretical training, access to top-tier computational resources, and engagement with interdisciplinary research.

5. Capacity of the Participating Organisation(s)

5.1 Template table: *Overview of Participating Organisations*

Organisation role	PIC	Legal Entity Short Name	Academic organisation (Y/N)	Country	Name of Supervisor
Beneficiary	999885022	NORDITA	Y	Sweden	Axel Brandenburg

Associated partner linked to a beneficiary (if applicable)					
Associated partner for outgoing phase (mandatory for GF)					
Associated partner for secondment (if applicable)					

5.2 Template table: ***Capacity of the Participating Organisations***

Choose one of: *Beneficiary (compulsory)* *Associated partner linked to a beneficiary (if applicable)* *Associated partner for outgoing phase (mandatory for GF only)* *Associated partner for secondment (if applicable)* *Associated partner for non-academic placement (if applicable)*	
[Full name + Legal Entity Short Name + Country]	
General description	
Role and profile of supervisor	
Key research facilities, Infrastructure and Equipment	
Previous and current involvement in EU-funded research and training programmes/actions/projects	

Maximum 1 page for the Beneficiary and ½ page per Associated partner.

8. Environmental considerations in light of the MSCA Green Charter

The activities addressing climate and environmental challenges in this project align with the host institution's priorities. Consistent with the MSCA Green Charter, my research at Nordita will prioritize environmental sustainability through concrete actions. For work-related travel and daily commuting within Sweden, I will use **low-carbon** options like trains, public transit, bicycles, and scooters. Stockholm's green infrastructure and Nordita's central location often eliminate the need for cars or even public transit for local travel. Nordita provides two bikes for occasional staff use and offers bike repair stations, further encouraging green transportation. Remote and hybrid collaboration are fully supported at Nordita, with all meeting rooms equipped for video conferencing. This enables effective virtual meetings and international collaboration, cutting down on travel needs.

Within Nordita's facility, I will aim to minimize energy and water consumption: for example, the widespread use of communal water dispensers (available at Nordita facility) eliminates the need for single-use bottled water, helping to reduce plastic waste. Moreover, recycling is well-organized, covering everything from food waste to electronics,

plastics, cardboard, and batteries. Nordita also maintains and reuses electronic equipment, extending device lifespans—these devices can support both staff and visiting students who need computers for short-term research.

Engagement with Nordita's work environment representatives will ensure that all project practices align with both institutional guidelines and MSCA sustainability standards, and will allow for regular review and improvement based on current EU environmental policies.

When organizing events or workshops, I will promote sustainable practices, including offering both vegan and vegetarian catering options, minimizing the use of printed materials, and providing comprehensive waste sorting and recycling. Supplier sustainability will also be a key factor in procurement decisions. Beyond Nordita, I'm committed to sharing sustainability knowledge through outreach and public engagement to promote eco-friendly practices in the wider scientific community.

Together, these actions will be more achievable, supporting the MSCA Green Charter's goals and fostering a culture of environmental responsibility throughout my fellowship at Nordita. This will contribute to societal well-being, expand social opportunities, and promote human development.