Alessio Tuscano
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Date: October 11, 2025

Subject: Application for Erasmus+ Traineeship

Dear Selection Committee,

My name is Alessio Tuscano and I am currently enrolled in the Master's Degree in Physics of Data at the University of Padua. I am applying for the Erasmus+ Traineeship Programme to further develop my skills and contribute to research in an international, collaborative environment focused on computational physics, scientific high–performance computing, and complex systems.

During my academic journey, I have cultivated a strong interest in the intersection between theoretical physics and advanced computational methods. My studies and projects—often in collaboration with peers—have allowed me to translate physical models into efficient simulation code, optimize algorithms for parallel architectures, and apply modern data analysis techniques to scientific problems. Notably, my Bachelor thesis taught me how to build scientific datasets for deep learning, while recent individual and group projects have helped me refine my coding practices and manage larger, modular codebases.

I am passionate about making scientific code faster and more efficient, enabling researchers to achieve their goals more rapidly. For example, in a Simulation-Based-Inference project, accelerating simulations made previously infeasible research possible within practical timeframes.

I am motivated by environments where computational approaches advance physical research—whether through large-scale simulations, efficient data pipelines, or integrating machine learning in inference tasks. I believe that working in an international research group would broaden my perspective and allow me to contribute actively to collaborative projects.

Beyond the technical and academic aspects, I am eager to immerse myself in a new cultural and scientific context. Having experienced the value of collaboration during my studies in Padua, I look forward to extending this through an Erasmus+ traineeship.

With this traineeship, I hope to contribute my computational and theoretical skills to a stimulating research project, ideally as part of a team working on computational physics, complex systems, or scientific computing. I am flexible regarding timing and duration.

Thank you very much for your consideration.

Sincerely,

Alessio Tuscano