



LERU STudent REseArch Mobility Programme
(STREAM)
Project proposal



Host University:
Università degli studi di Milano

Field:
Physics

Specified field, subject:
Particle physics, Machine learning

Research project title:
Machine learning the structure of the proton

Possible starting month(s):

Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
						X					

Possible duration in months:

1	2	3	4	5	6
		x			X

Suitable for students in:
2st cycle (master students)

Prerequisites:
Computing (ideally python), statistics, some general background in particle physics would be a plus

Restrictions: none

Description:
This project is within the framework of the ERC-funded N3PDF project <http://n3pdf.mi.infn.it/> and/or within the framework of the NNPDF collaboration <http://nnpdf.mi.infn.it/>, both led by the same PI. The NNPDF collaboration strives to provide an accurate determination of the proton substructure for precision physics at high-energy colliders, specifically the LHC of CERN. This is done using modern machine learning techniques, specifically developed by the N3PDF group. The project can be more tilted towards the particle physics (perturbative QCD) or the computing and statistics aspects (machine learning) according to the inclination of the student. The expected scope of the project can be between a typical intership (three months), and a final Master's project (Masters thesis, up to six months). **Only in presence.**

Faculty or Department: Department of Physics

Contact person: International relations office, University of Milan

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