Thesis Proposal for the Master's Degree in Physics

Title: Climate change and clear-air turbulence: a risk for aviation

Abstract (max 10 lines):
Among the various consequences of climate change, the enhancement of extreme events is the most evident. On the other hand climate change induces also the variation of large-scale pattern in atmosphere, thus changing teleconnections between the various part of the planet. One of the consequence, is the increase of the probability for airplanes to encounter severe clear-air turbulence during a flight. This kind of turbulence is very dangerous, because it results invisible to instruments onboard.
The thesis will investigate the parameters which can be used to determine the occurrence of clear-air turbulence, thus calculating the enhanced probability of occurrence for some standard aviation routes.

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Laboratory where the thesis is carried out: Astrophysics

Any participating external structures: National Institute of Geophysics and Vulcanology (INGV)

Type of thesis:
☐ compilation
☒ research
specify if ☐ experimental ☒ theoretical or ☐ data analysis