ENS | PSL

DOCTORAT de l'Université PSL

RAPPORT DE SOUTENANCE

Nom et prénom du doctorant : ABRAMIAN Sophie

Date de la soutenance : 5 décembre 2023

Président du Jury : SPEICH Sabrina

Prénom et Nom	Signature	Prénom et Nom	Signature
Caroline MULLER		Pierre GENTINE	Pour P. Gentine
Jean-Pierre CHABOUREAU		Camille RISI	
Sandrine BONY		Rémy ROCA	
Jan HAERTER	Pour J. Haerter	Sabrina SPEICH	

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On December 5, Mrs Sophie Abramian successfully defended her thesis entitled "Physical origins of the properties of mesoscale convective systems and implications for high impact events".

Sophie Abramian presented the results of her research with an exceptional pedagogical oral presentation. She explained the numerous scientific results obtained during her thesis in a very clear and adapted way. The diagrams and figures presented to illustrate these results enabled the jury to appreciate the quality and quantity of the work carried out. Sophie Abramian's work represents a substantial contribution to our understanding of complex mesoscale convective systems and how their impact on extreme precipitation can change when environmental conditions change.

The jury recognized the broad range of approaches, diagnostic tools, and novel methodologies employed by Sophie Abramian' to analyse state-of-the-art numerical simulations. The jury also praised the detailed physical analysis and the variety of approaches and methodologies developed or improved by Sophie Abramian during her thesis. Most of the analyses have already been published in high-impact scientific journals, with Sophie Abramian as the first author of three out of five publications.

During the discussion with the jury, Sophie Abramian demonstrated her ability to answer questions on all aspects of the thesis. In particular, she showed a great mastery of the large body of literature as well as on the methodologies developed as well as of the many different physical processes studied. In addition, she proposed innovative approaches to better identify and quantify the physical processes associated with mesoscale convective systems, demonstrating their potential applicability to the broader scientific topic.

In conclusion, the jury unanimously agreed that both the presentation and the ensuing debate were of excellent quality. This defense highlighted Sophie Abramian's ability to conduct research at a high level and demonstrated her exceptional pedagogical skills. For these achievements, the jury unanimously decided to award Sophie Abramian the title of Doctor of the University *Paris Sciences Lettres* in Sciences of Climate, Atmosphere, Ocean of the Earth and other Planets, and congratulates her on her remarkable accomplishments.

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