



Modeling climate trends and variability in the Himalaya to understand cryosphere changes

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November 20, 2019

2012/2013: L3 Earth and Environment Sciences

Study of a **model of inversion** of **friction** conditions at the base of the **polar caps** (Fabien GILLET-CHAULET, LGGE, 2 months)



2013/2014: L3 Physics

Study of a quality tool (BDT) to reject poorly reconstructed photometric **redshift** in **LSST** and to **improve performance** photo-z (Jean-Stéphane RICOL, LPSC, 2 months)

↓ WHV in Japan / freelance in programming websites

2017/2018: M1 Atmosphere, Climate and Continental Surfaces

The impact of **Arctic sea ice variability** on the **Northern latitude hydrological cycle** in models and reanalyses (Olga ZOLINA, IGE, 3 months)



2018/2019: M2 Atmosphere, Climate and Continental Surfaces

Identification and filtering of the **ocean chaos** by **Machine Learning** (Thierry PENDUFF, IGE, 6 months)

Highlight **climate variability** and **trends** in the **Himalayas** using the global atmospheric model **LMDZ** [?] with a **variable resolution grid** centered on this region.

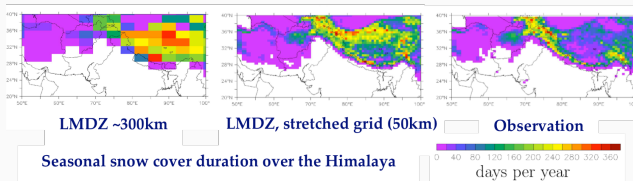


Figure 1: Adapted from [?]: snow cover duration in LMDZ experiments and NSIDC observation over 1998-2008.

Subgrid parameterization of the **surface energy balance** computation in the LMDZ model (snow-covered or not + elevation)
(ESM-Snow-MIP3 initiative [?])

Resources

- IGE / IPSL collaborations (use and development of the model)
- Meteorological and glaciological observations of the GLACIOCLIM network [?]

