

## **SURFEX SC – GMAP contribution (15 March 2019)**

### **Staff movement related to SURFEX or physiographic database**

- Floriant Suzat has recently replaced Stéphanie Calmels
- Adrien Napoly arrived in august 2018

### **Atmospheric cycles with SURFEX**

- Operational systems in March 2019 : CY42\_op2 with SURFEX 7.3+ in AROME and ARPEGE  
Overseas AROME specific option : Use of the 1D Oceanic Mixing Layer  
Main technical features in ARPEGE regarding the surface : Use of SURFEX in all ARPEGE configurations except in the low resolution non-linear trajectory used by the 4DVAR minimisation. The choice has been made to bring back surface variables in the ARPEGE atmospheric code. This allows the use of FullPos to produce operational surface diagnostics, low-resolution guess for the 4DVAR and coupling files for “ALADIN/ISBA” LAMs.
- Experimental suite (operational at the end of 2019) : CY43t2\_op1 with SURFEX V8+ in AROME and ARPEGE

### **Current and planned scientific and technical works**

- Tests of FLAKE in ARPEGE
- Tests of GELATO 1D in ARPEGE are planned in 2019 in collaboration with a post-doc APLICATE (Niramson Azouz)
- M2 train-sheep on ISBA-DIFF and MEB-ES
- M2 train-sheep on ECOCLIMAP-SG in AROME SOFOG3D
- The bug in the PGD for subgrid orographic parameters in case of a global stretched geometry seems to be solved
- Construction of an offline global version of SURFEX forced by operational ARPEGE forecasts

### **Technical problems**

- Problem with openmp in V9, double parallelization (in SURFEX and in the host model) Is-it possible to deactivate openmp in SURFEX in this case ?
- Problem at high global resolution (global kilometric model). It's impossible to construct a T8000 PGD
- PGD with ECOCLIMAP-SG seems to be too large to be used in operational, even for AROME

### **Requests**

- Is it possible to add a NWP test in the tests base ?
- Same question for a global test, particularly for PREP ?
- The possibility for PREP (in version n) to produce files for a SURFEX version n-1 or n-2. Necessary for the ALADIN collaboration