

Cloud Verification against satellite data

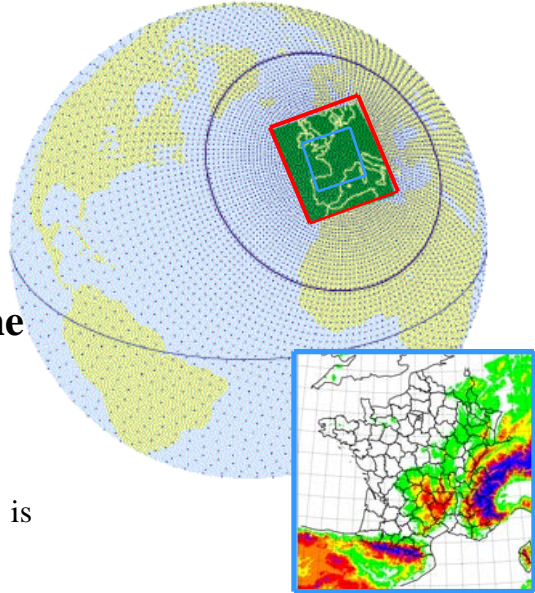
- **3 data types :**

- ALADIN-FRANCE
- AROME
- SEVIRI METEOSAT 9

- **Time interval for the verification :**

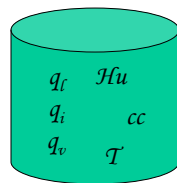
6 hours

verification domain is
the AROME domain
with 0.1 ° grid



Simulated satellite images

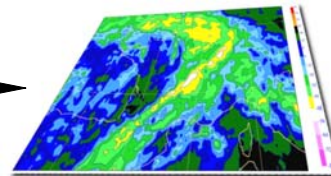
Output of the model
forecasts



RTTOV-Cloud



SSI

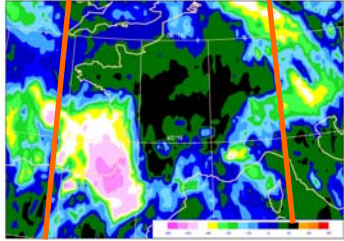


Infrared images 10.8 micrometers

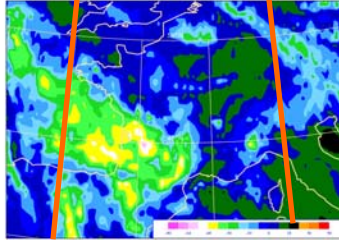
10,8 micrometers

9 June 2007 : SSI AROME

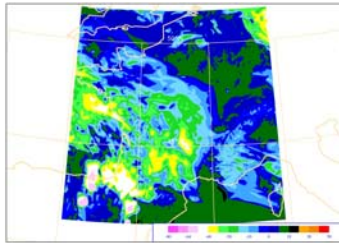
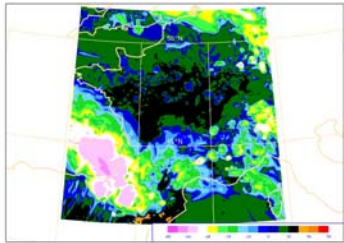
9/06 at 18 UTC



10/06 at 0 UTC



Observation

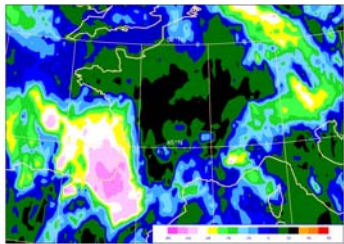


AROME

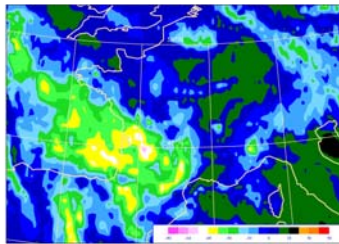
10,8 micrometers

9 June 2007 : SSI ALADIN

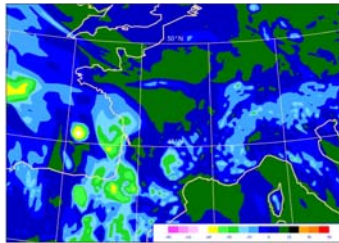
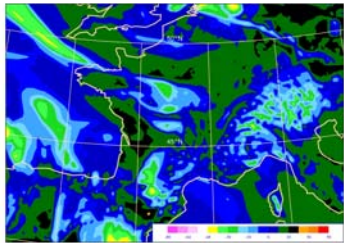
9/06 at 18 UTC



10/06 at 0 UTC



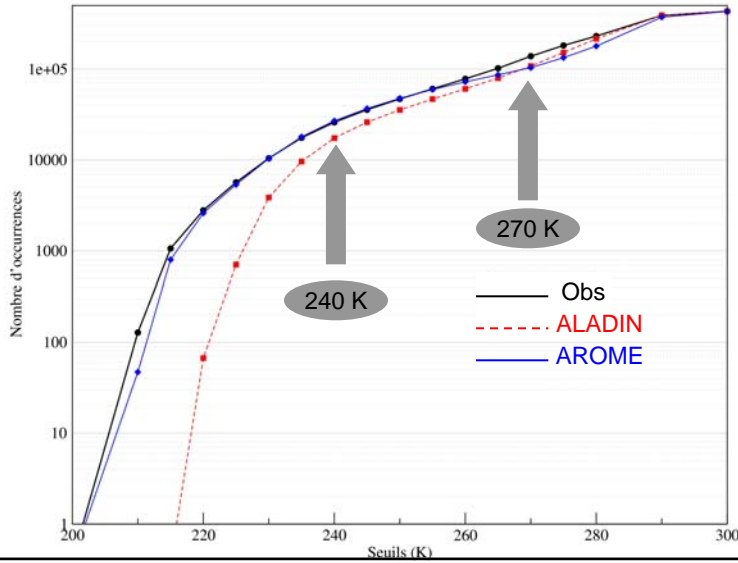
Observation



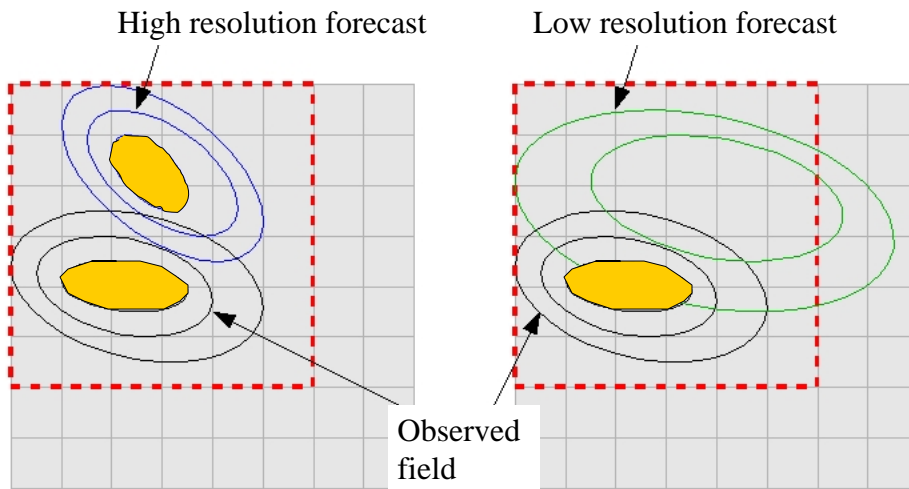
ALADIN

Verification during June 2007

Histogram of observations and forecast BT



double-penalty and neighbourhood



Fuzzy approach

- Brier Score (BS): $BS = \frac{1}{n} \sum_{k=1}^n (pk - ok)^2$ with $BS_{perf} = 0$
- Brier Skill Score(BSS): $BSS = 1 - \frac{BS}{BS_{ref}}$
- 2 interesting limits :
 - 1- Neighbourhood size = 0 : $BSS \xrightarrow{v \rightarrow 0} HSS$
 - 2- Neighbourhood = simulation domain $BS \xrightarrow{v \rightarrow L} \frac{1}{n} \sum_{j=1}^n \alpha(j) \times (1 - BIAS(j))^2$

