



A SATELLITE TOOLBOX FOR SUGAR BEET MONITORING

JOUDELAT François^{ITB}



Get Sentinel-2 data

- Standardised formats
- Storage-efficiency
- No third-parties

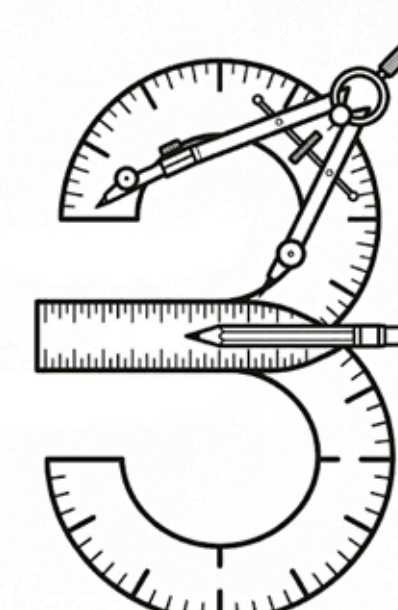


Find the sugar beet plots

- Single date in-season
- Simple random forest, classification kappa = 0.8
- Inference on standard PC

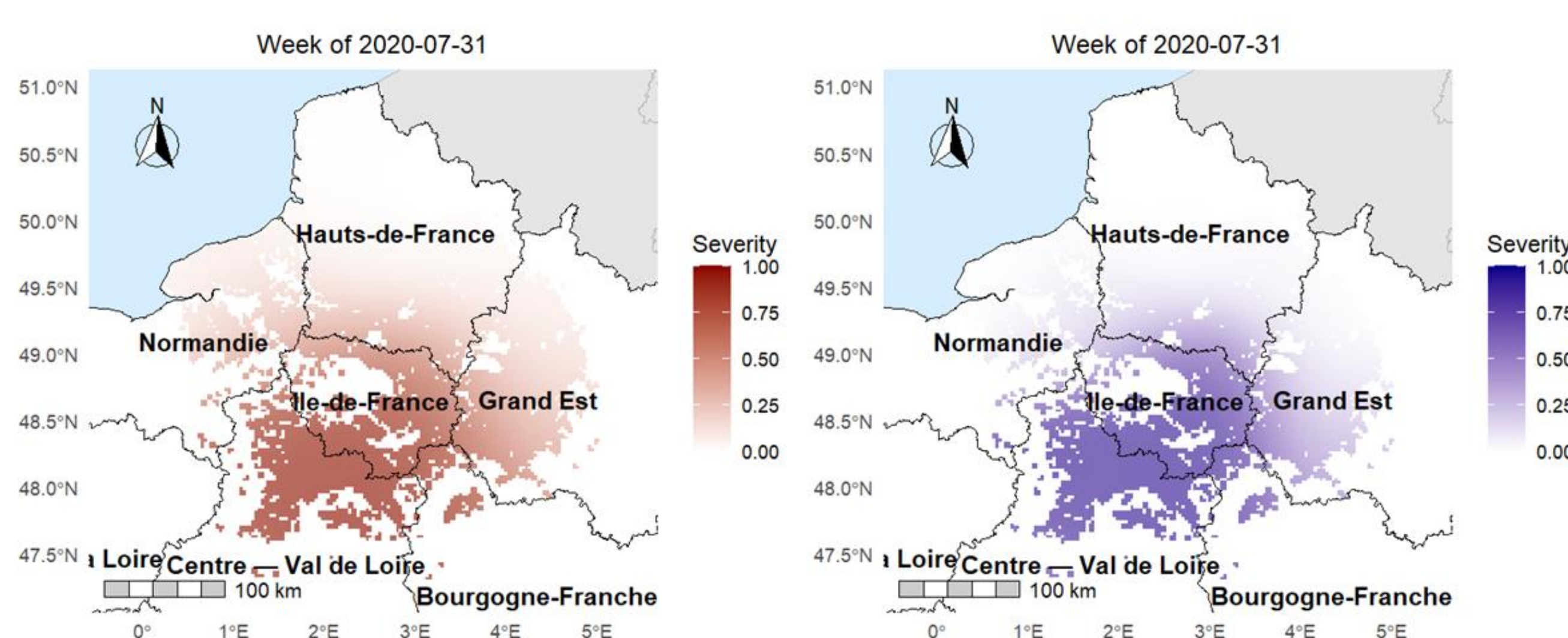


François Joudelat. Détection et cartographie des parcelles de betteraves par télédétection satellite. ⟨hal-05356733⟩



Estimate biotic and abiotic stress : virus yellows example

- Vegetation index screening (NDRE, GCC, mNDblue, NDYVI, ...)
- External cofactors
- Hierarchical random forest models on multiple dates
- Mean Absolute Error severity = 13%
- Classification macro F1 = 0.7



Predicted / Observed

Research project « BEETSAT » (PNRI-C)



INRAE



Predicting disease severity and large-scale spread from coupled severity measurements and imperfect indicators : Application to beet yellows. Baptiste Oger and al. , forthcoming

What next ?

- Complete human assesment with full scale inference
- Analyse large scale data to find risk factors
- Understand how symptoms spread in time and space
- Correlate with production losses