GeoChange 2010
Research Symposium GIScience for Environmental Change
Campos do Jordão, SP-Brazil
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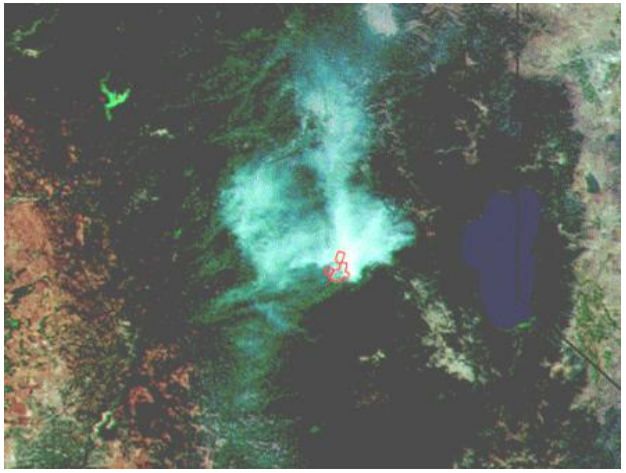
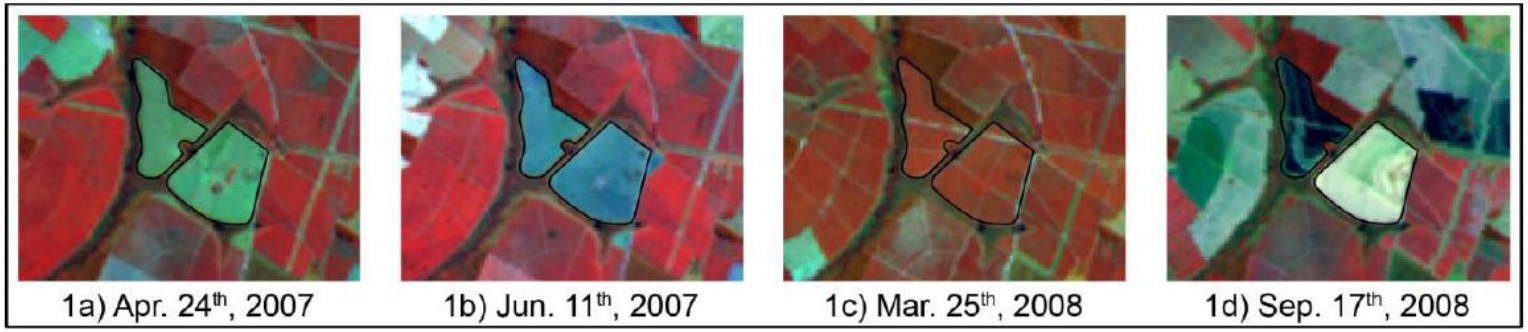
Decision Trees to Detect Changes in Remote Sensing Image Time Series

Thales Korting
Leila Fonseca
Gilberto Câmara

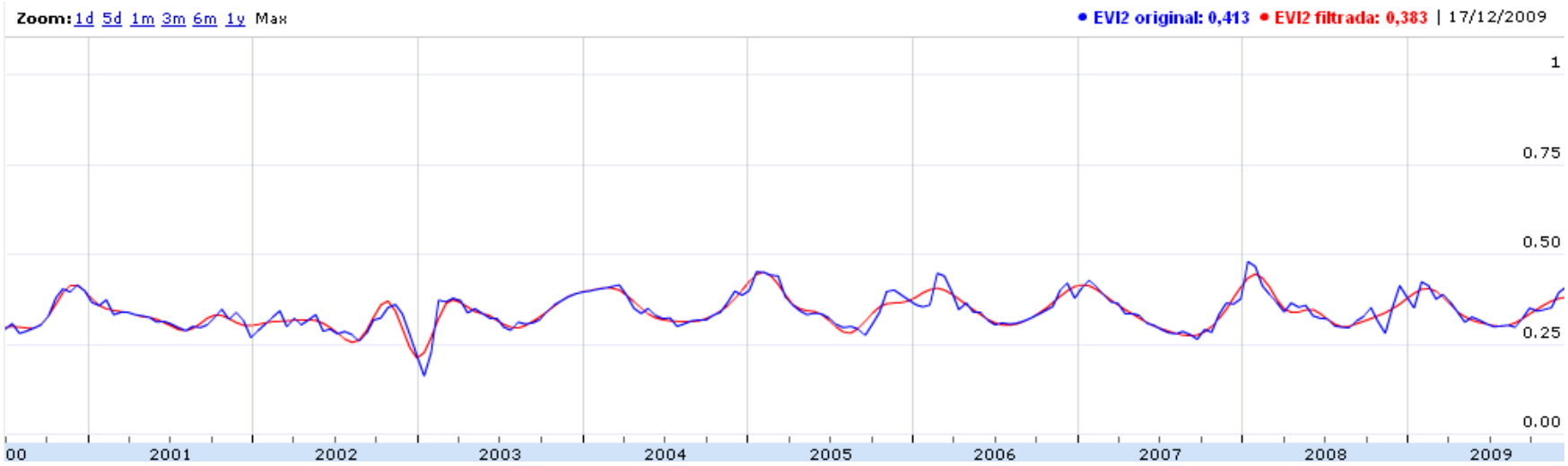


Satellite observations offer new opportunities for understanding how the Earth is changing.

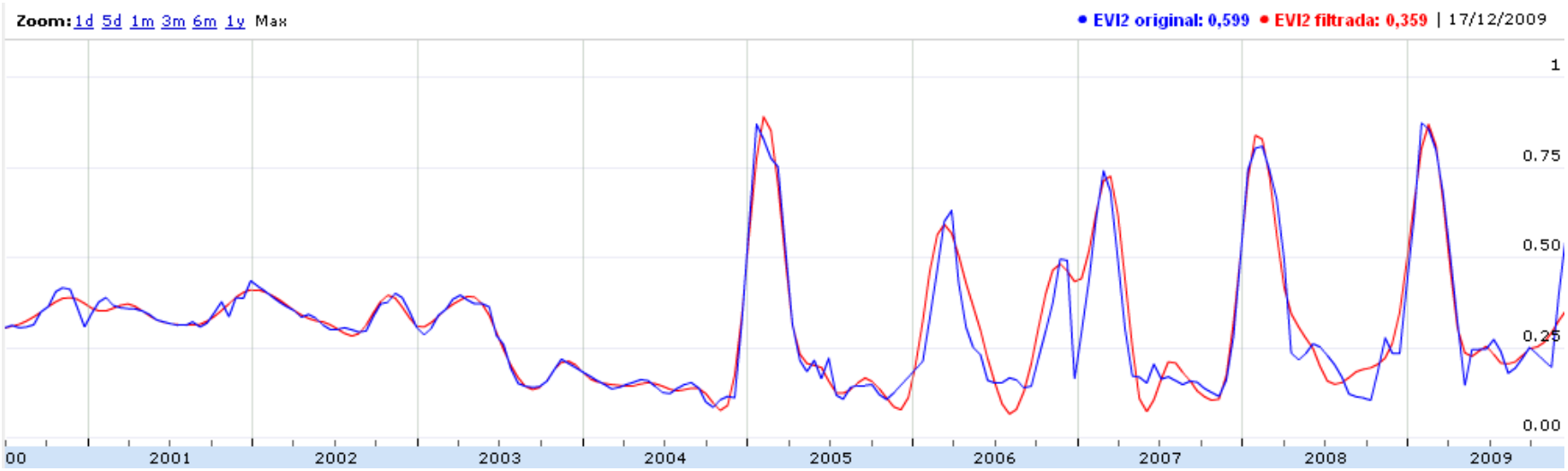


How the objects gain or lose their identity? How their properties change? What changes happen simultaneously?

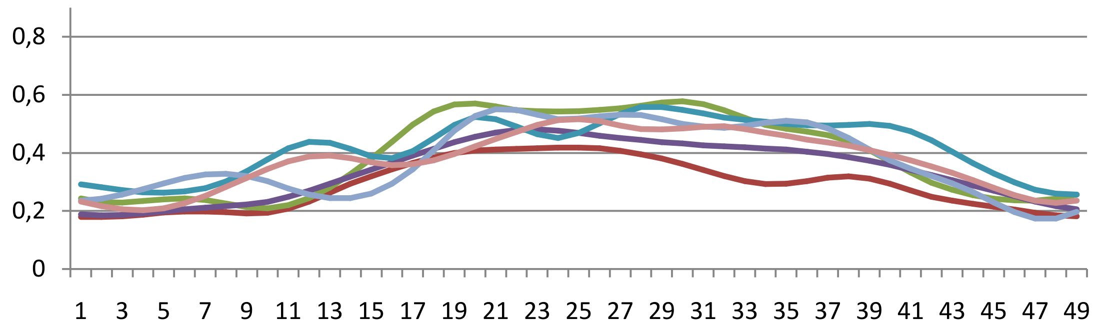
The variation of features from the images defines *trajectories*.

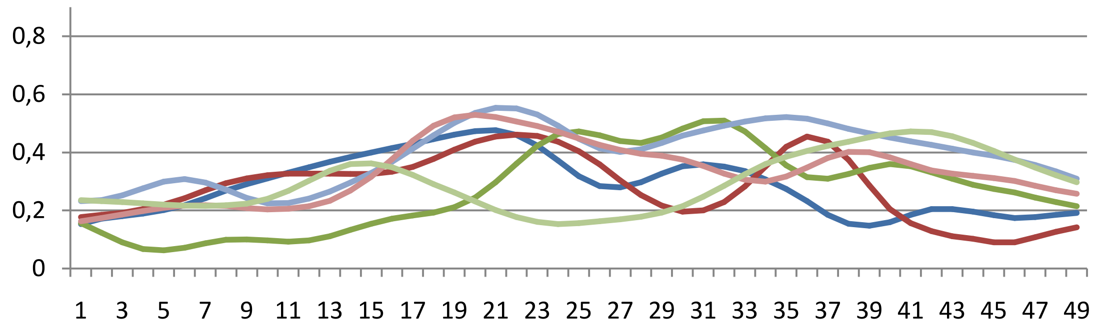


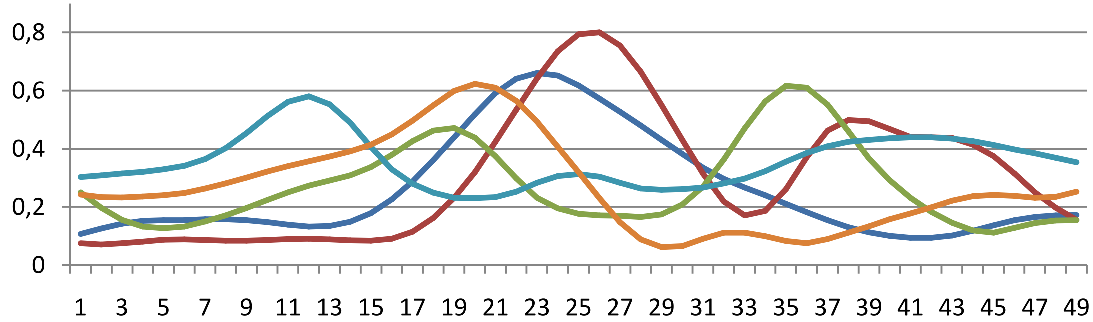
Trajectory portions that represent changes define *change signatures*.



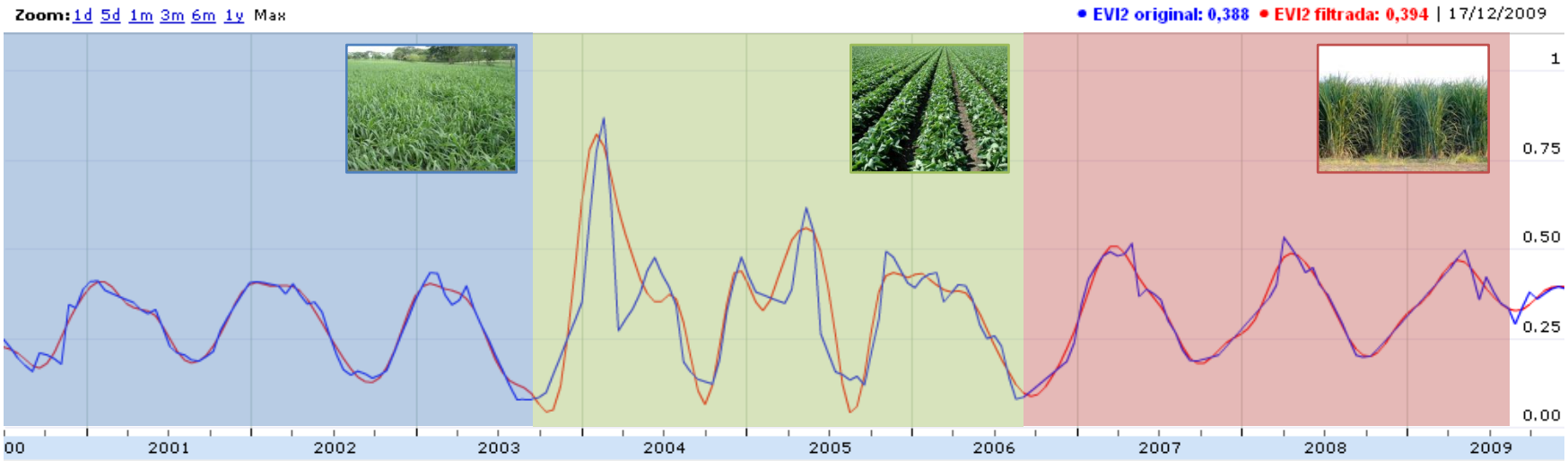
What features are good descriptors of change?



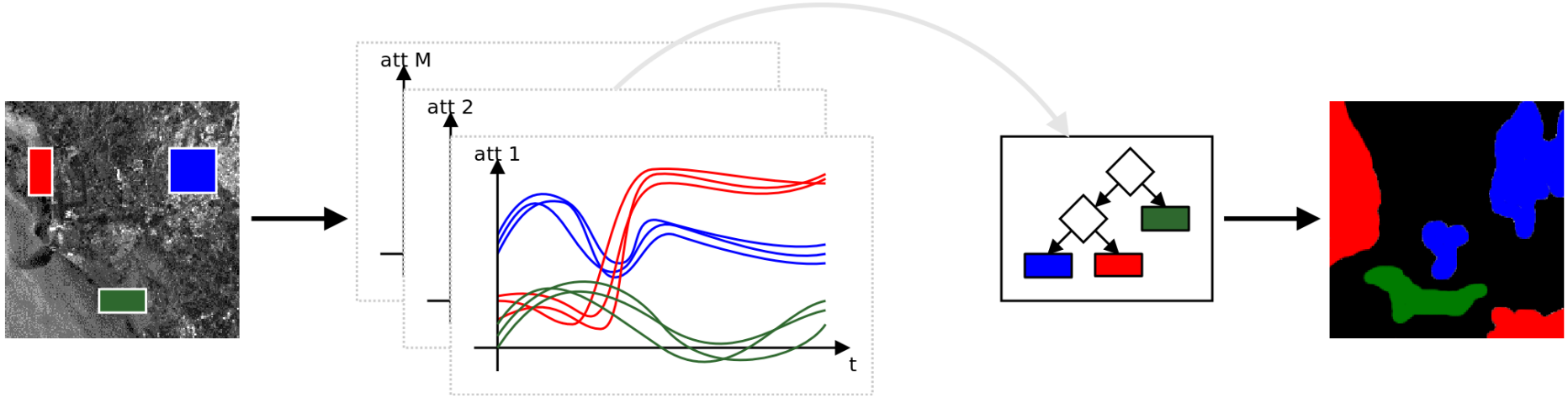




Recovering change signatures is useful to understand the land evolution.



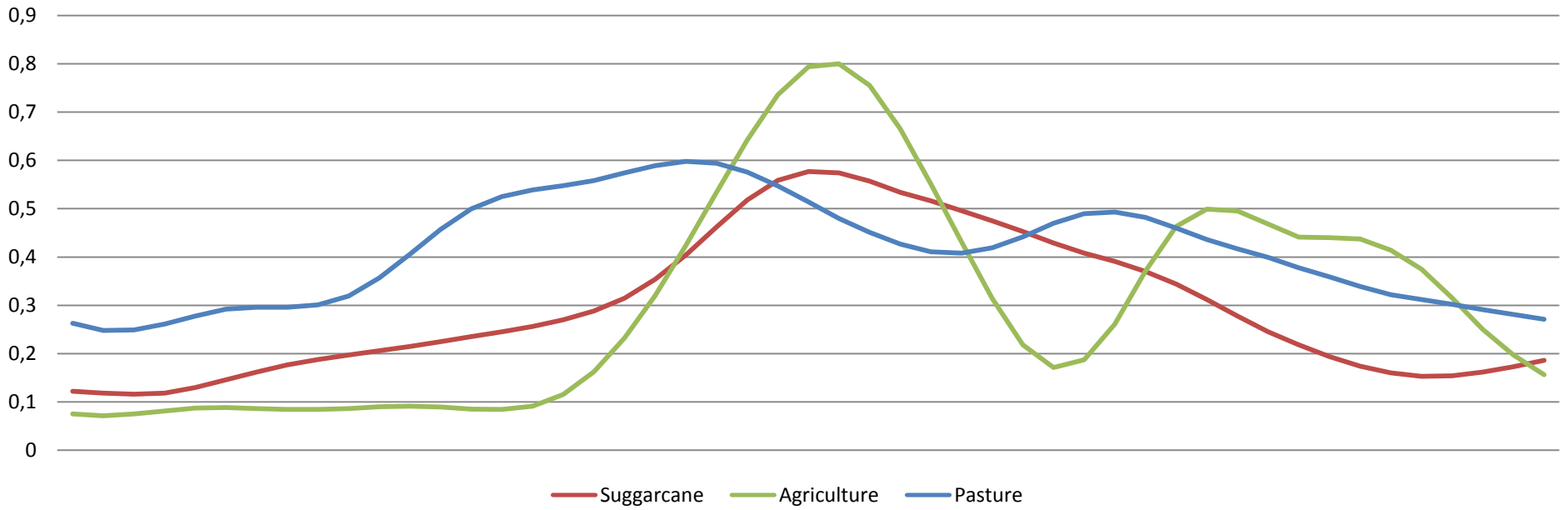
Classifying change signatures



Decision trees can classify change signatures in remote sensing imagery.

```
amp_serie <= 0.461
|   avg_1d <= 0.001188
|   |   min_1d <= -0.083: sugarcane
|   |   min_1d > -0.083: pasture
|   avg_1d > 0.001188: sugarcane
amp_serie > 0.461: general agriculture
```

amp_serie = data amplitude
avg_1d = first derivative average value
min_1d = first derivative minimum value



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