**Event detection** – **General questions**

**Can we think of a method that learns automatically the expected counts on historical data?**

* A baseline can be obtained proportionally // MBSS
  + Just use the baseline and the ratio count / baseline?
    - Problem: randomness. This is corrected by marginal probability in MBSS
* How to incorporate randomness?
  + MBSS uses Gamma-Poisson modeling
  + Can we fit the best probability distribution to the data? Feasible?
    - For a given set of events, we would look only for certain distribution families
      * Health surveillance 🡪 Poisson, Gaussian, Gamma
      * Crime 🡪 Gaussian, Cauchy…
    - Can we identify the 10 most probable distribution? Even if approximate result?

**Alternatives**

* Non-model based method **🡪** Topology
* Empirical baseline for multivariate datasets 🡪 Bayesian Network

**MBSS**

* Does the event framework works for all events? Multiplicative increasing
* Space fixed? Shape of region? Number of spatial regions considered??

**Interpretatbility under frequentist approach**

* MBSS interpretable because you can sum the proba over all the regions which contain a given location
* In frequentist approach, the p-value gives a interpretation of the anomalousness of region. But it only exist for regions (really?), cannot be aggregated for location 🡪 Check