some plans

- Immediate:
  - analyze the AmBe events with a given clustering algo
  - train a BDT/NN/XXX (with Igor)
    - "background" sample: easy. Can take dark pictures with random reconstructed clusters
    - "signal"? Not sure what to define signal: flag the events in some manual way as the different patterns and use as signal sample
    - doubts:
      - o(100) events: too few for training a NN?
      - what should be considered as signal? My impression is that we want to be agnostic and train a **multi-class BDT**
        - i.e. an algorithm which **classifies all possible** patterns
    - Igor can test his own classifiers, but needs first the "manual" flagging of patters
- Emauele should do:
  - run the clustering on some selected runs of AmBe to test different PIDs
  - light yield as a function of the field cage with Lemon data
  - also repeat the Fe calibration to have a baseline

other plans

- Current analysis setups

  - Most of results from G. Mazzitelli / D. Pinci.

    - makes clusters with simple algorithm, tracks with either Hiugh transform / libear fit

    - used for BTF, Fe calibration, AmBe

    - starts from old DAQ files (only Hdf5 of camera picture)

  - New one from me

    - makes clusters for either Fe (round) or snake-shape with DBSCAN algorithm

      - useful to cluster any shape that clusters, leaving out "noise" hits

      - makes ROOT trees with "reconstructed" quantities

        - track integral, longitudinal/transverse profiles, peak finder inside the profile (Bragg, etc)

        - also includes reconstruction of PMT signal (profile, integral, peaks...)

- To do (on the technical side)

  - start from a common format (maybe move to Hdf5 for both camera and PMT)

  - optimize speed for the pedestal subtraction / zero-suppression

  - tune the clustering for the three main cases (Fe, AmBe, neutrons from FNG)