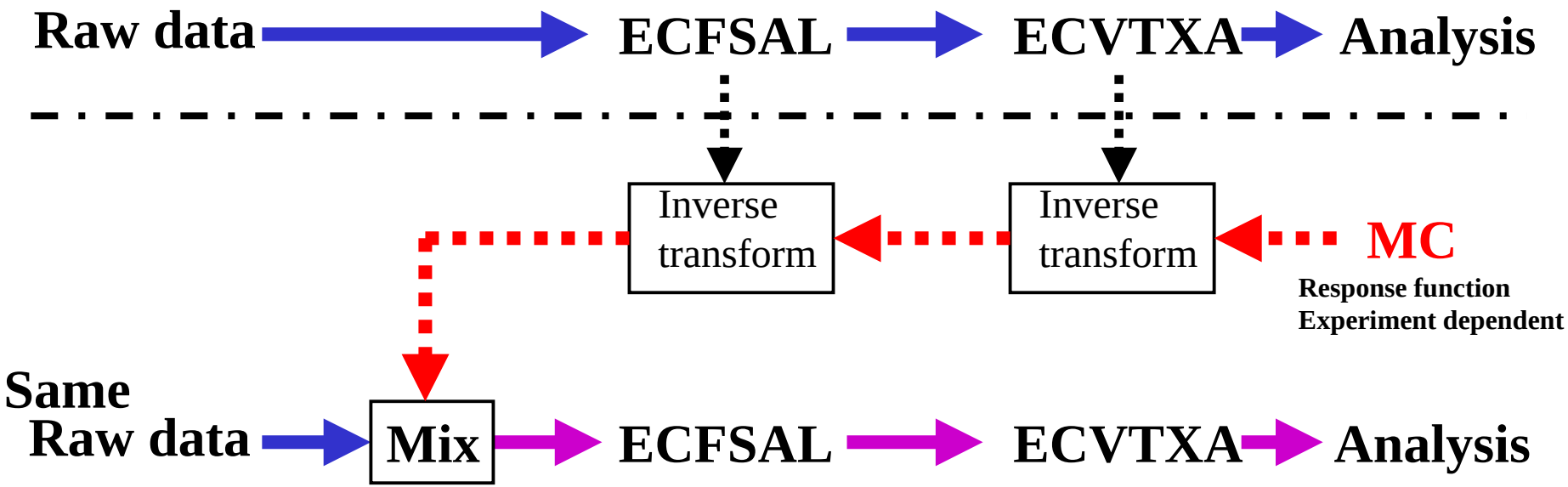
NETSCAN simulation in CHORUS and DONUT

- Difficulty of “Full” MC
  - Nuclear emulsion record everything
    - Radio activity in lead and emulsion itself, γ from potassium, cosmic ray…..
  - Every NETSCAN data set has different alignment, also thickness of passive material is not nominal value.
    - Do you produce all “geometry” in GEANT?
  - Distortion in position and slope
- Use real NETSCAN data as background environment and response function of TS.

Practical requirements

- To use real NETSCAN data as BG(Noise)
  - MC tracks must put into aligned BG(Noise)
  - Response function of micro track
    - Efficiency, resolution, pulse heights and volume obtained by real tracks.
    - Track selector principle is very simple.
      - Those response function includes distortion effect and thickness miss alignment into pulse height and accuracy.
  - Need all transformation parameters to original coordinate.

MC chain



ECFSAL : Alignment and reconstruction
ECVTXA: Fine alignment and vertex analysis

Response functions are applied to MC truth micro tracks.
Need adjustment of beam direction for MC micro tracks.

Functions for NETSCAN simulation

CMCTrk

- class CMCTrk{};
  - virtual int scan(mymcseg truth,vector<mymcseg>& scanned, int MULT);
- class CMCTrk**EXPNAME** : public CMCTrk{};
  - Response function(virtual int scan) for each experiment : scanning efficiency, measurement errors, PH and Volume.

ECFSAL

- int IEcfsal::inverseTransform(vector<cmytrk*>& vec);

ECVTXA

- int ECV::inverseTransform(vector<cmytrk*>& T);

Data I/O (NetScanDataStore)

- int NetScanDataStore::add_fxx_all(vector<cmytrk*>& tk_add);