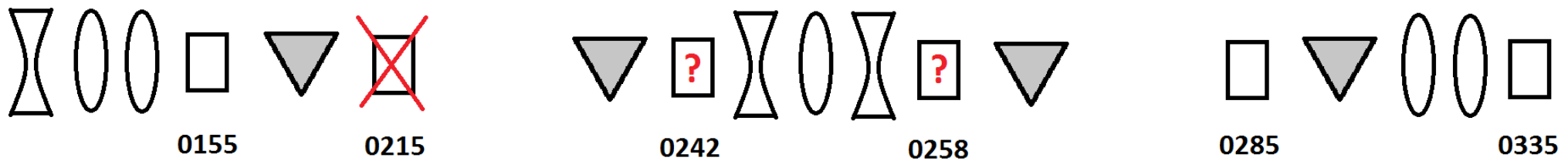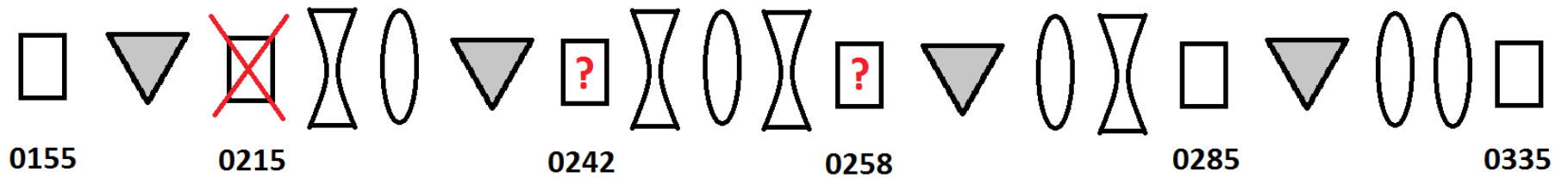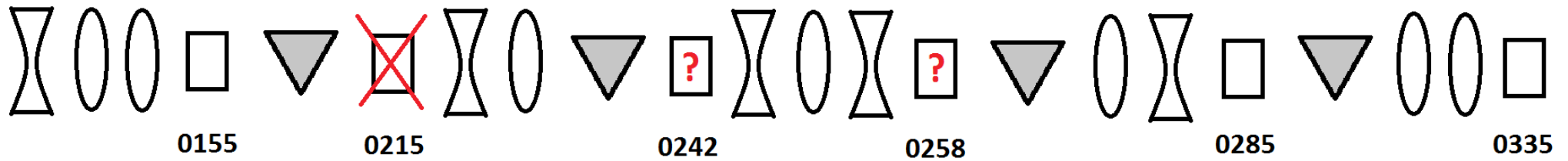# Summary of chicane optics measurements

Ben Constance
23rd July 2013

Chicane measurements

- Measurements made using linac correctors 1320 and 1420

- Data collected with all CT (plus sometimes TL1) BPMs

- Triplets in girders 14 and 15 off

- Three different machine configurations:

  - Chicane at R56 = 0.2

  - R56 = 0.2 and drift up until first bend

  - R56 = 0.2 but with QDD0220-S and QFE0230-S off

- Must be careful with monitors

  - BPM0215 is saturated

  - BPI0242 and BPI0258 are prototypes with bad droop

Three chicane configurations

0155   0215   0242   0258   0285   0335

0155   0215   0242   0258   0285   0335

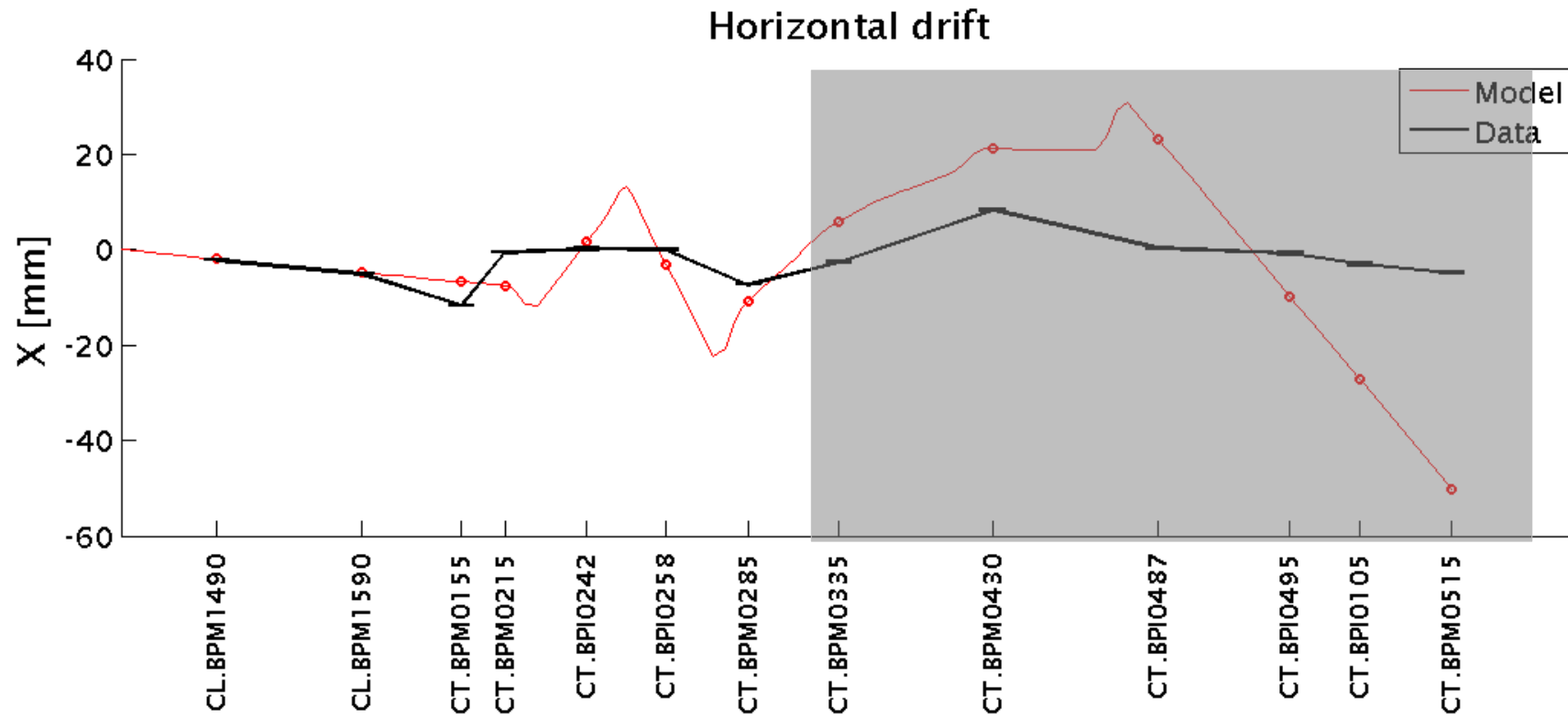0155   0215   0242   0258   0285   0335

Distances corrected for analysis

- Distances were measured with a tape
  - Most are correct to within a few cm
  - BPM0335 about 15 cm off
  - Chicane measured to have slightly asymmetric arrangement of quads (< 10 cm level)
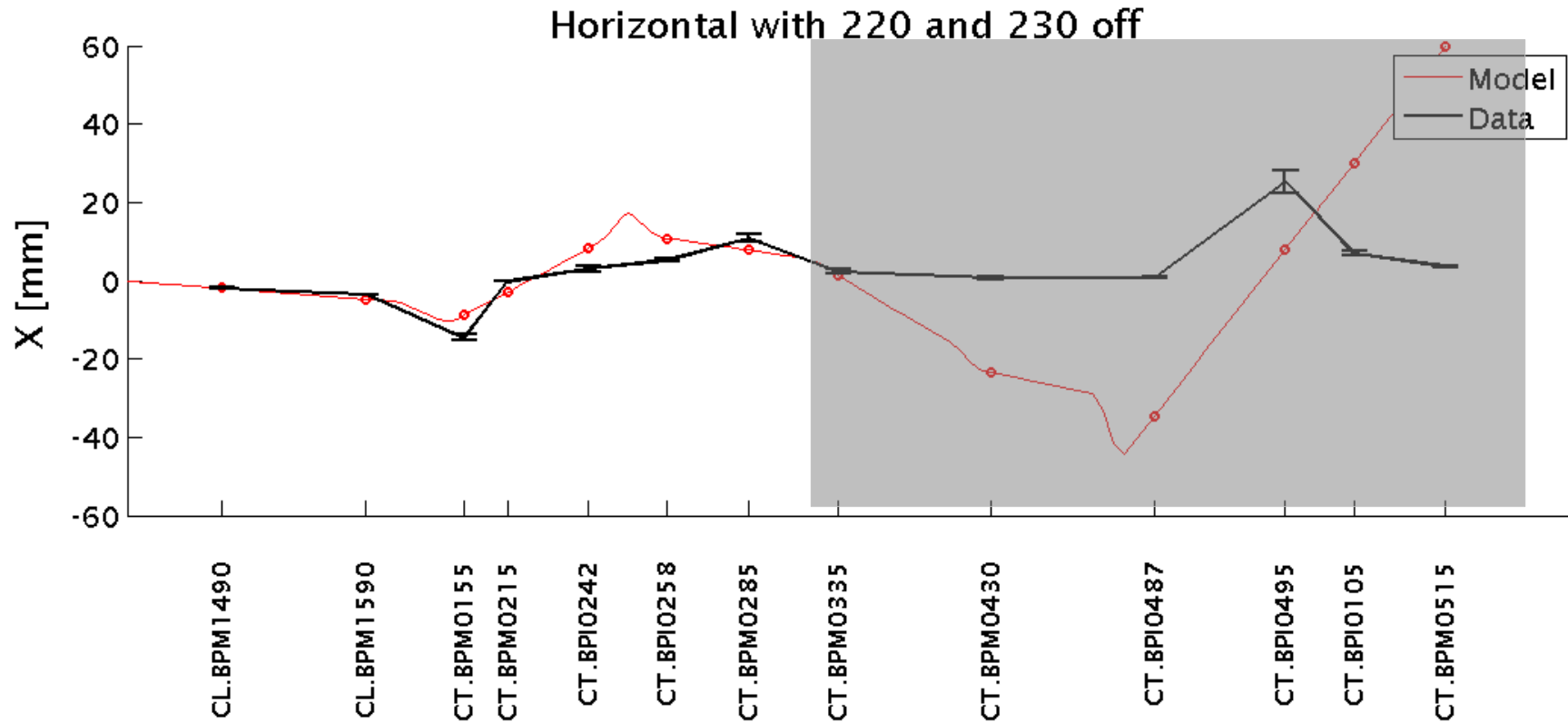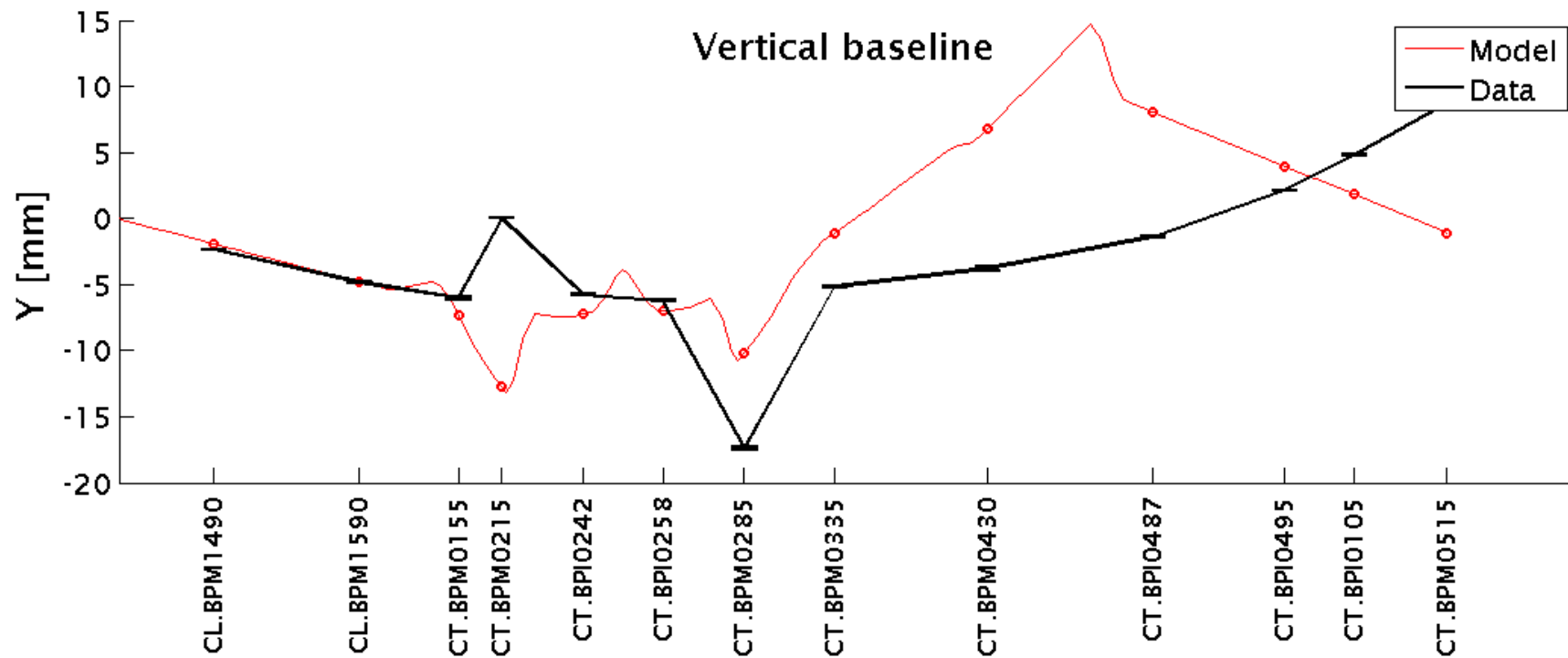- Not permanently changed in MAD model yet
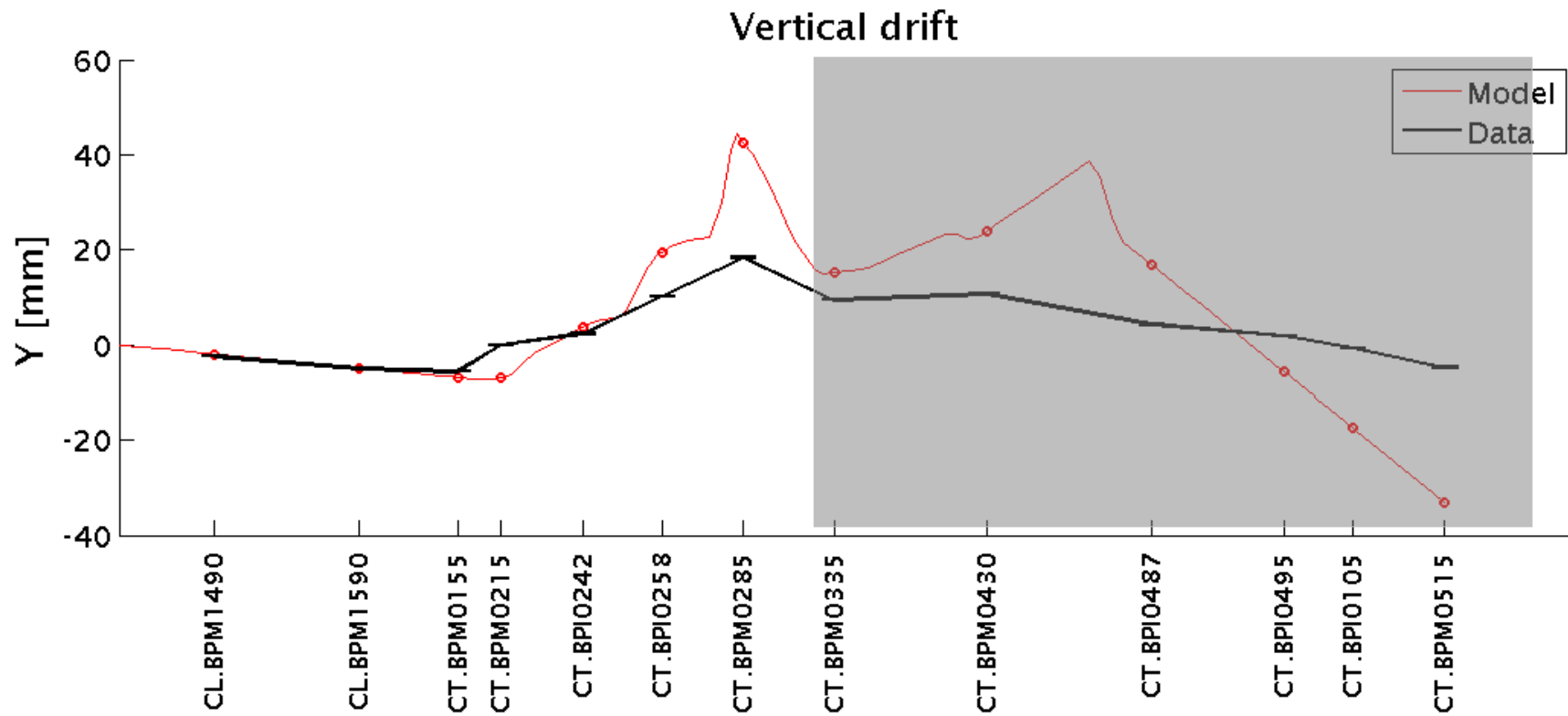
Response due to CL.DHD1420
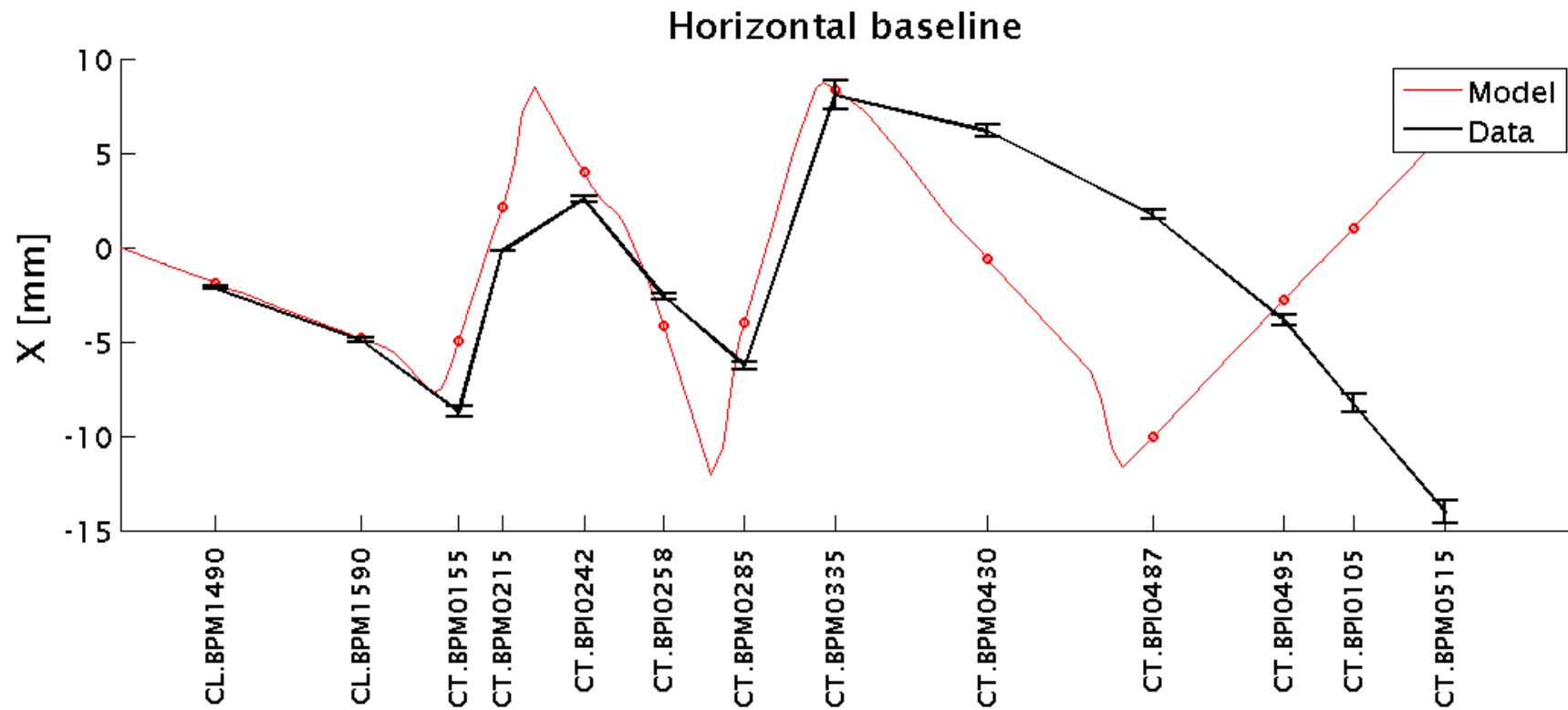
Response due to CL.DHD1420 (2)
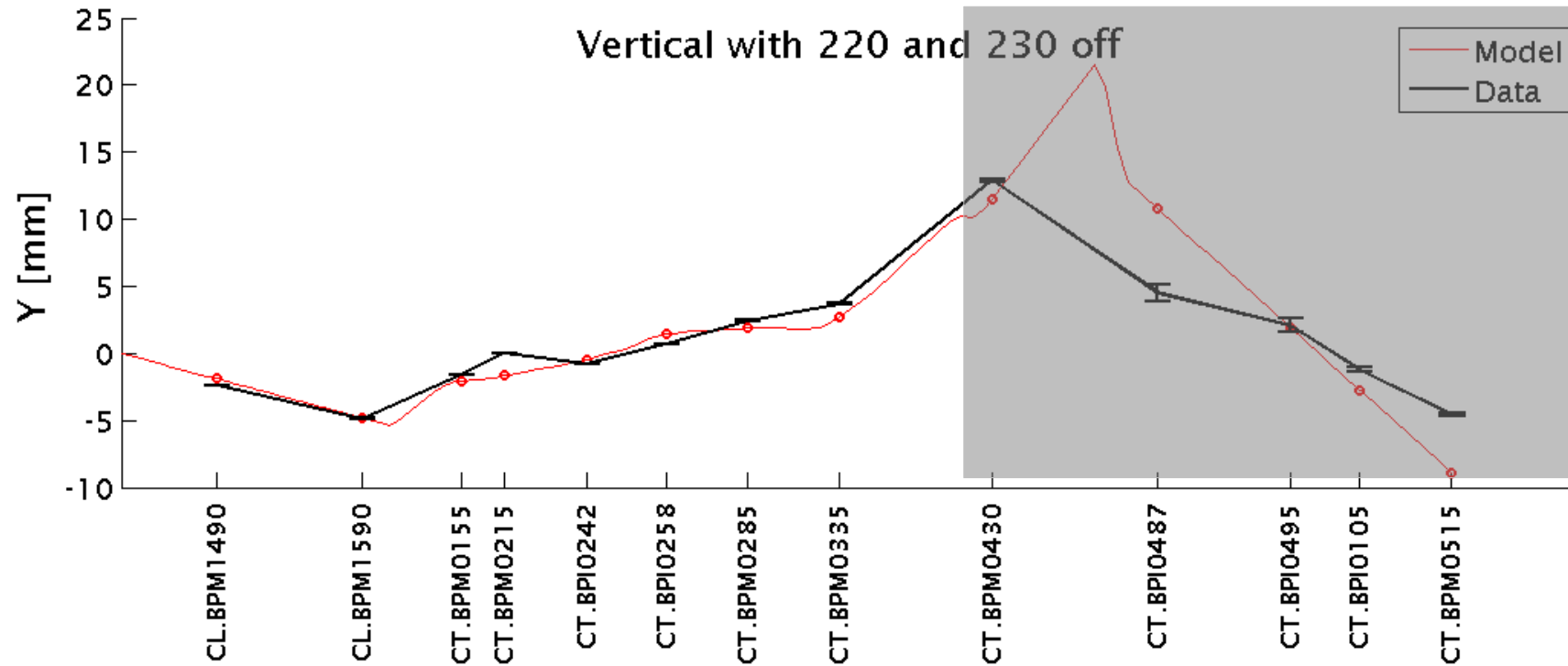
Response due to CL.DHD1420 (3)

Response due to CL.DVD1420

Response due to CL.DVD1420 (2)

Response due to CL.DVD1420 (3)

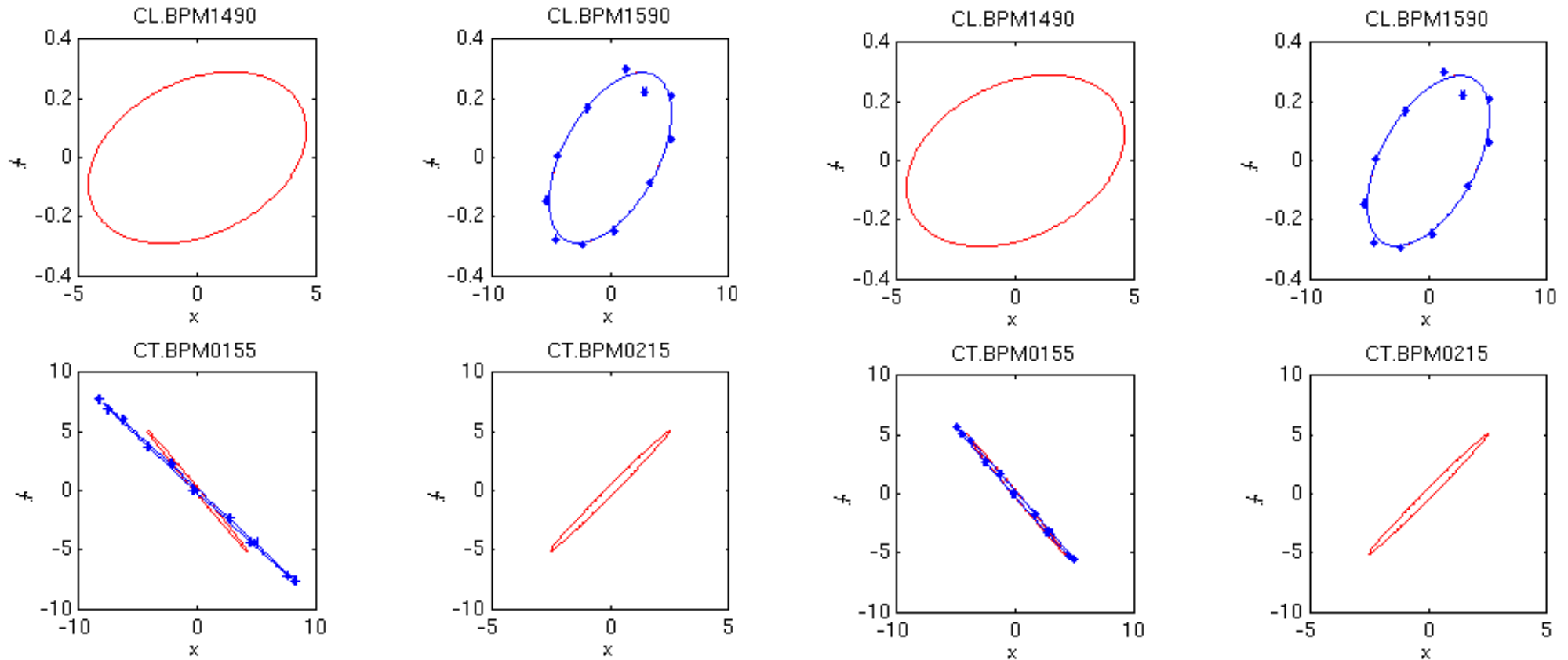# Calibration of BPM0155

- BPM0155 did not match model predictions, even for drift data

- Horizontal and vertical consistently high and low resp.

  - Cannot be distance error

- Ratio of MAD to measured response for the 3 data sets:

	Base	Drift	220 & 230 off
X	0.57	0.58	0.61
Y	1.2	1.2	1.3

- Reran analysis with calibration factors 0.6 and 1.2
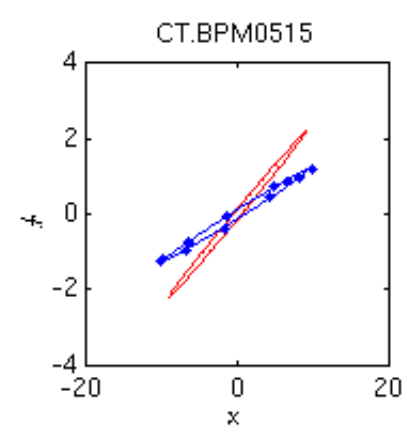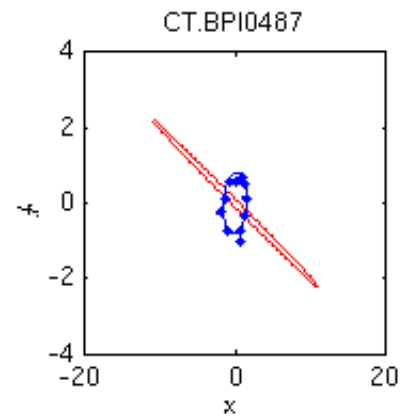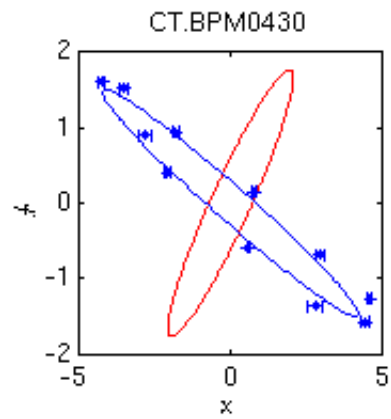
Example of calibration correction

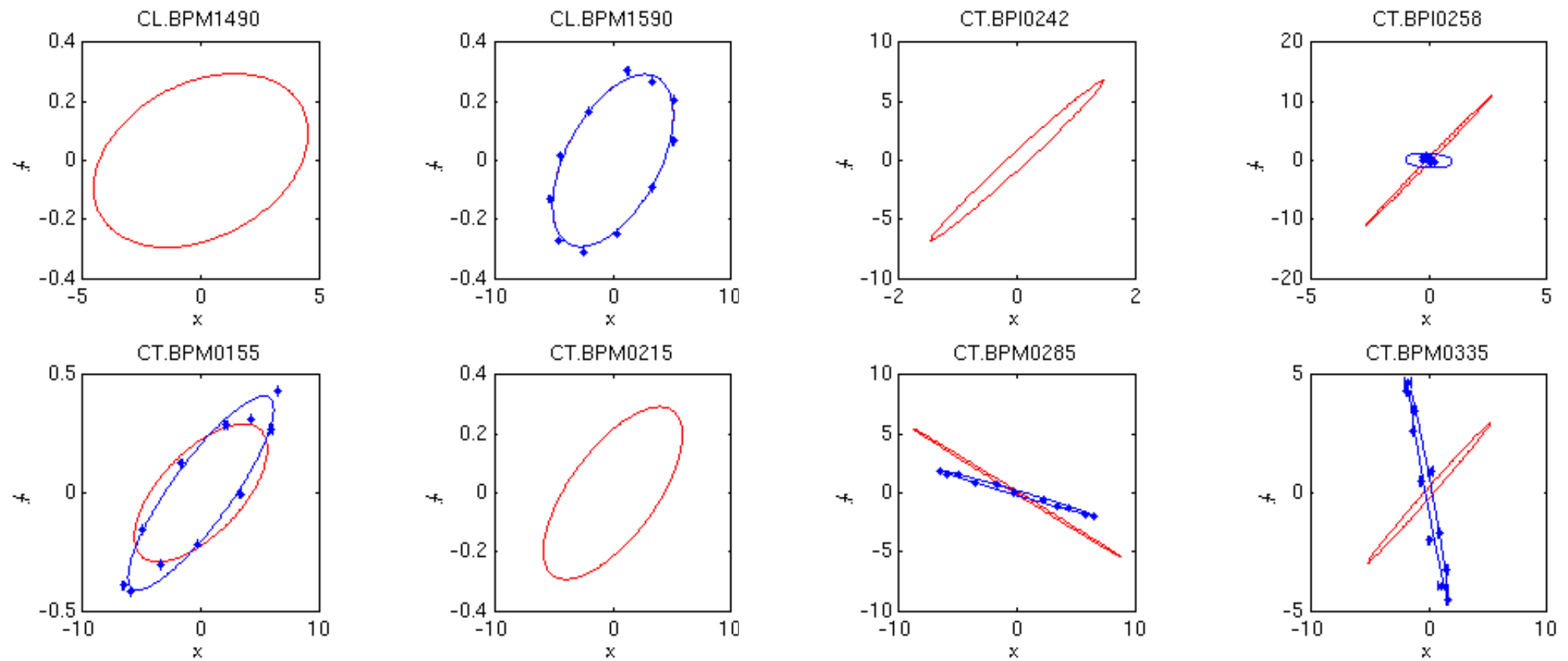- Calibration correction used for next plots
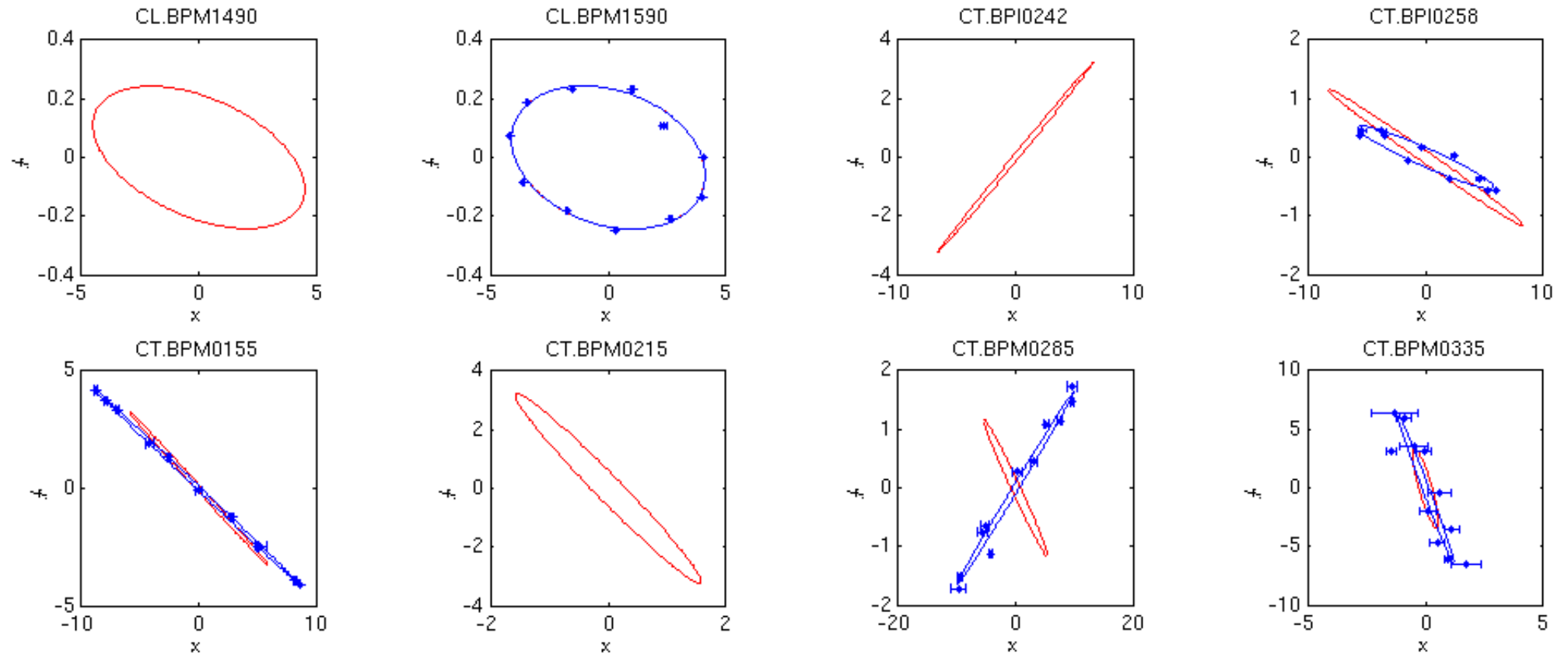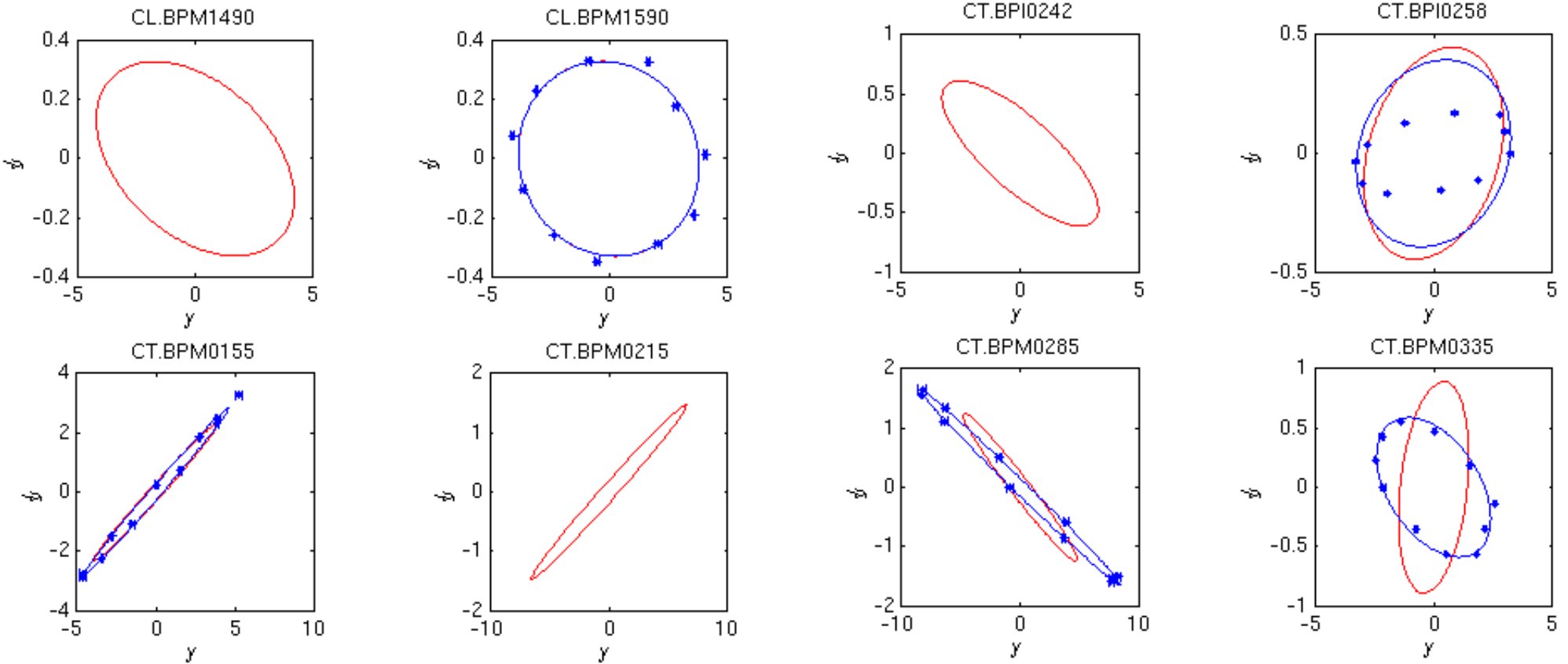
Full data – horizontal base dataset (1)
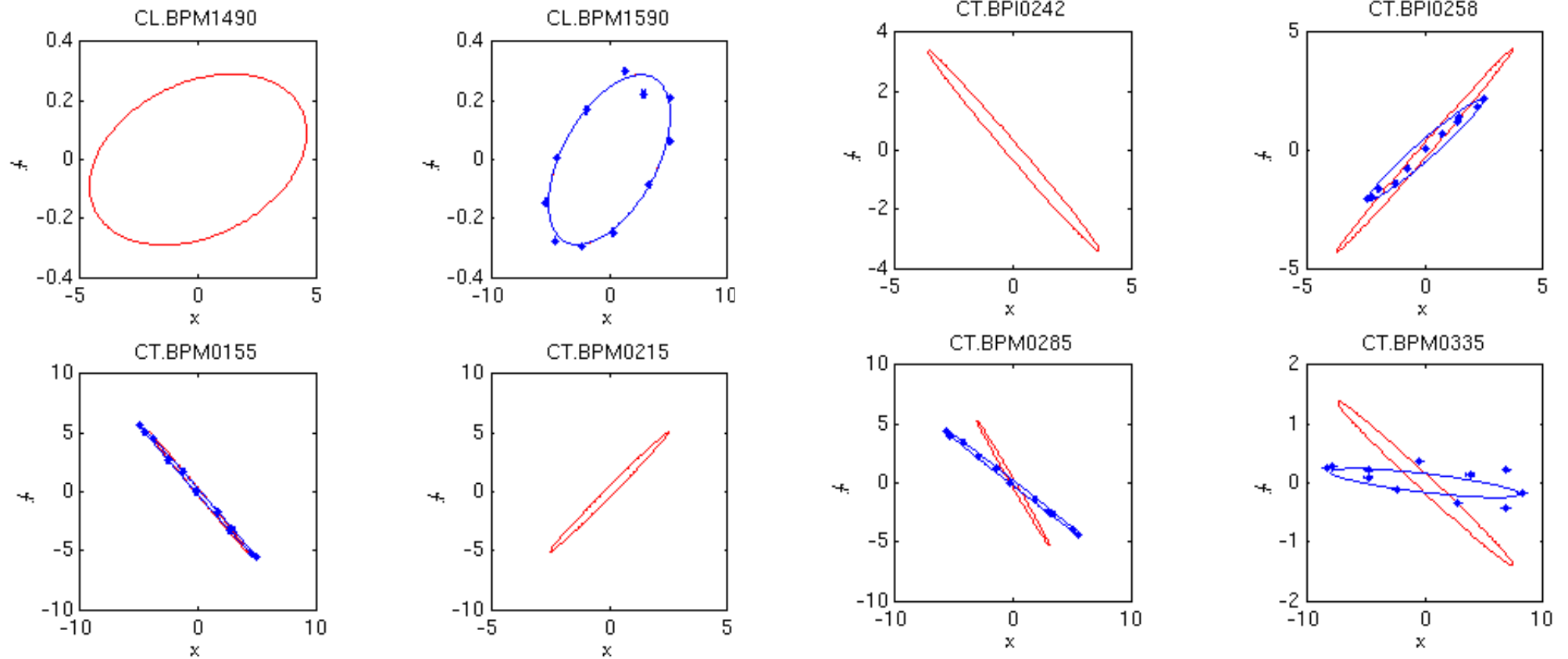
Full data – horizontal base dataset (2)
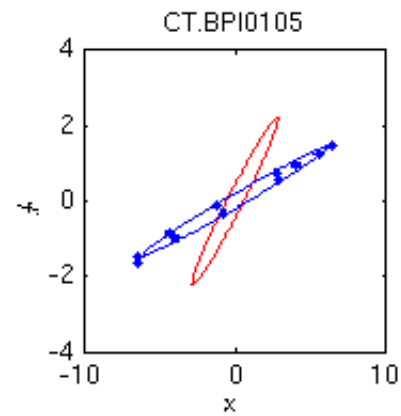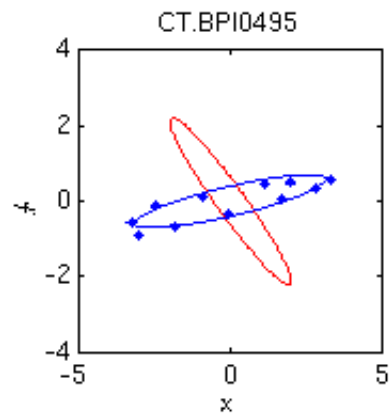
Full data – horizontal drift dataset

Full data – horizontal 220 & 230 off
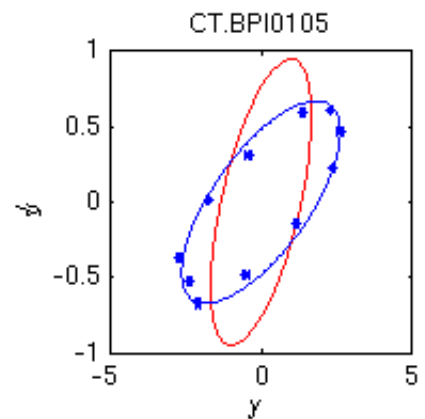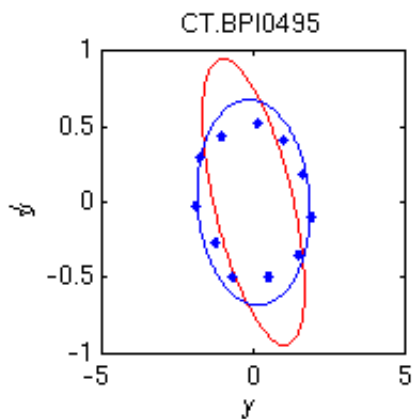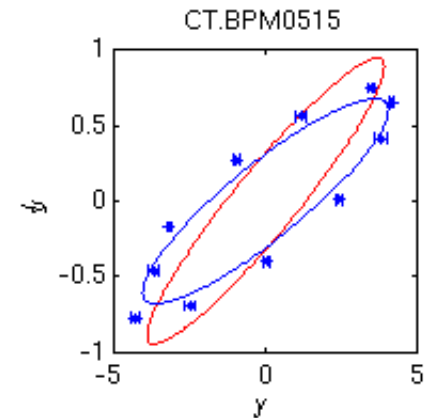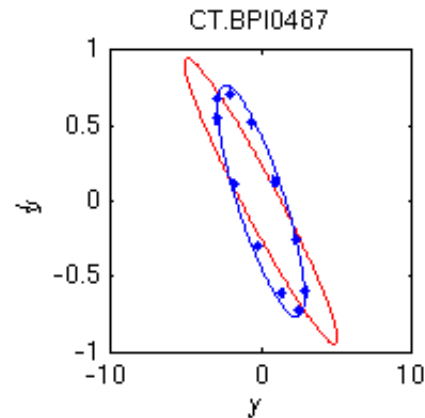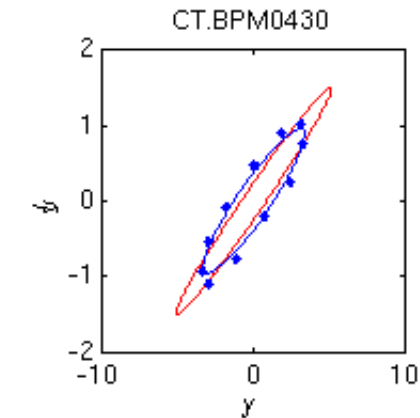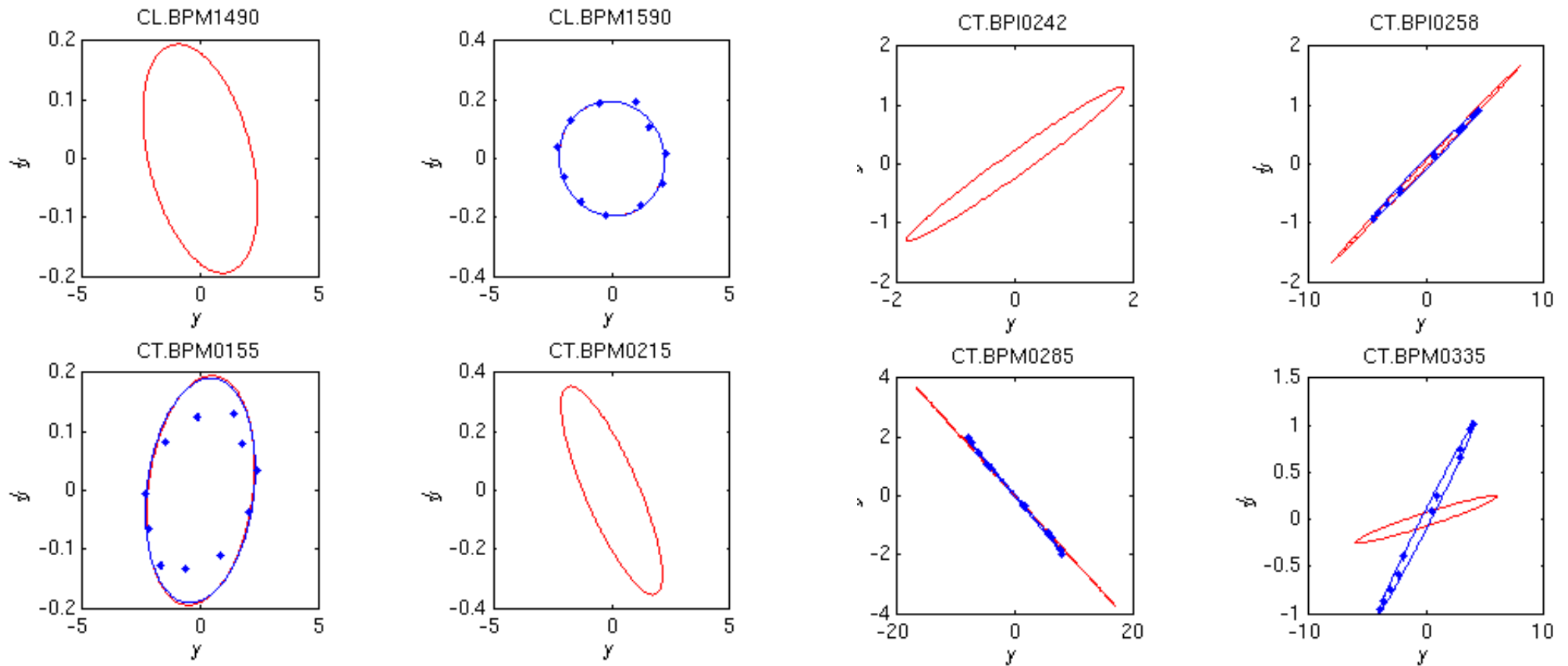
Full data – vertical base dataset (1)

Full data – vertical base dataset (2)

Full data – vertical drift dataset

Full data – vertical 220 & 230 off