PROCEDURE

- Begin with Level 1 event lists, apply tap-ringing and amplifier scale corrections, and compute fine positions f_p from adjacent tap amplifier signals $A_{\{i-1,i,i+1\}}$,

$$f_p = \frac{A_{i+1} - A_{i-1}}{A_{i+1} + A_i + A_{i+1}} \,.$$

- Filter over region, status-bits, and PI to reduce background.

- Compute expected distribution of counts across each tap based on observed spectrum.

- Compute position shift needed to make the observed raw counts distribution across a tap to conform to the expected distribution,

$$\delta_{pix} = f_p^{emp} - f_p \,,$$

  where $f_p^{emp} = F(i) - 0.5$, with $F(i)$ being the cumulative representation of the required shape of the corrected counts distribution, as a function of a sorted location index i (if there are N photons, then $F(0) = 0$ and $F(N) = 1$; for a flat distribution, $F(i) = i/N$).

- Average δ_{pix} over values of f_p corresponding to one pixel; this is the **empirical degap solution**.

- Fit 5^{th}-order polynomials to δ_{pix} over all values of f_p, as well as for $f_p > 0$ and $f_p < 0$ to derive coefficients that may be used in CIAO CALDB files