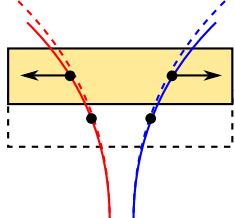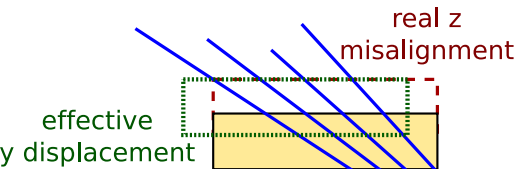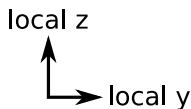local z

local x

oppositely-charged tracks
contribute to x residuals
with opposite signs: two-bin
method cancels their effect

oppositely-charged tracks
contribute to "z residuals"
with the same sign: two-bin
method does not solve it

real z
misalignment

effective
y displacement

Real local z misalignment looks
like an effective local y correction
when tracks are inclined
(everywhere but wheel 0)

local z

local y

tracks

interaction point or tracker