

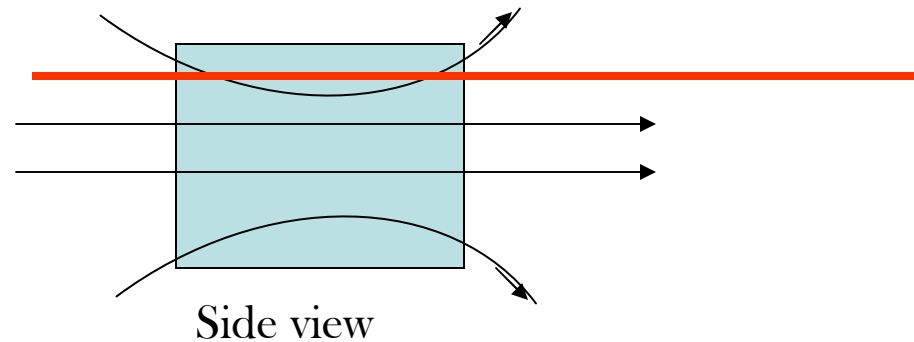
Solenoid Measurements with SSW

J. DiMarco, Fermilab

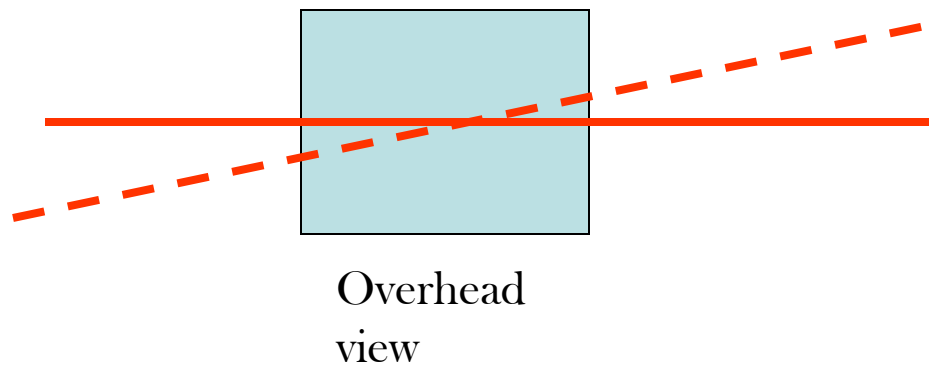
IMMW15

23-Aug-07

Vertical offset

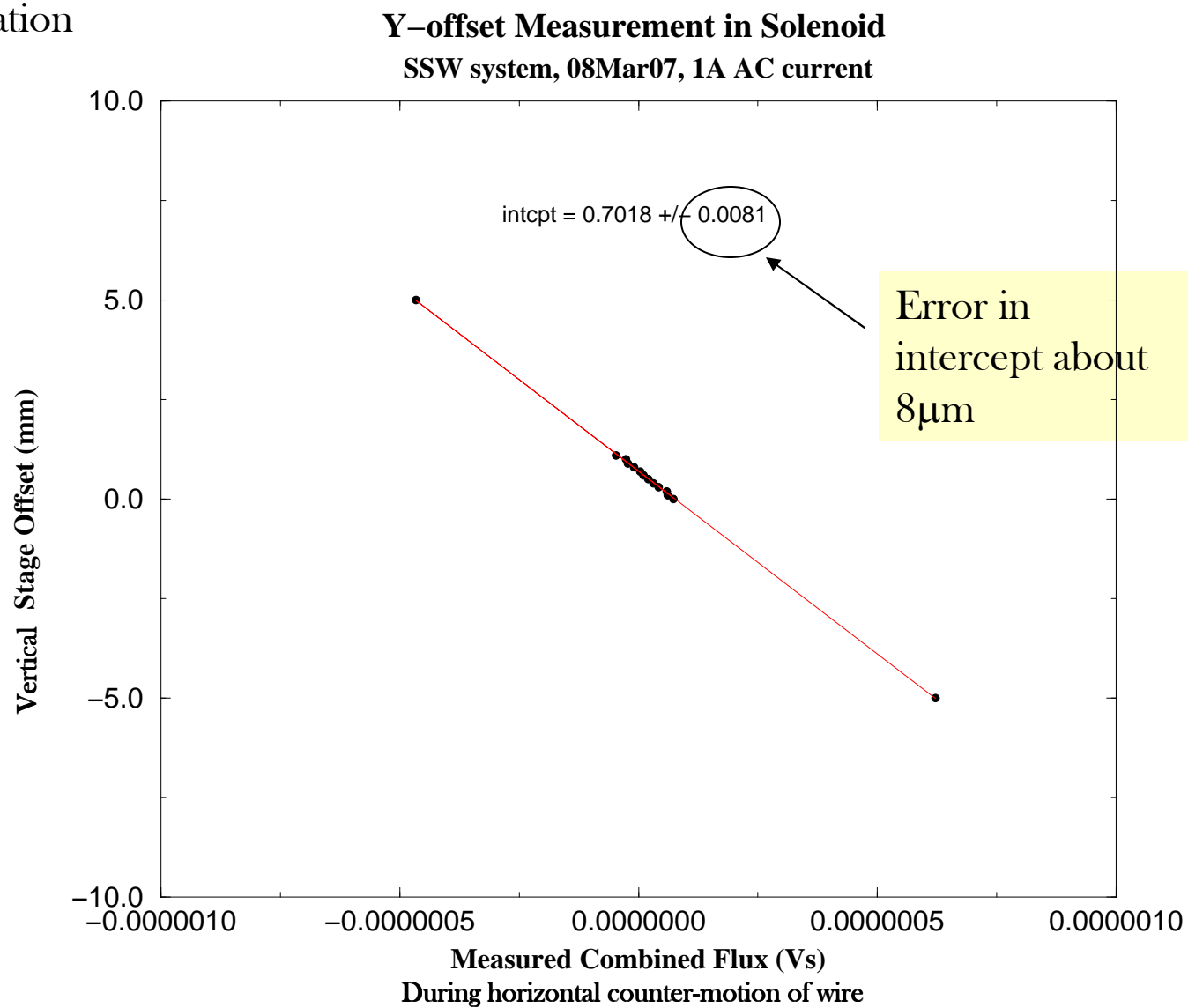


Wire which is offset vertically cuts flux lines if moved horizontally - but need counter-directional wire motion since field direction at magnet ends is opposite

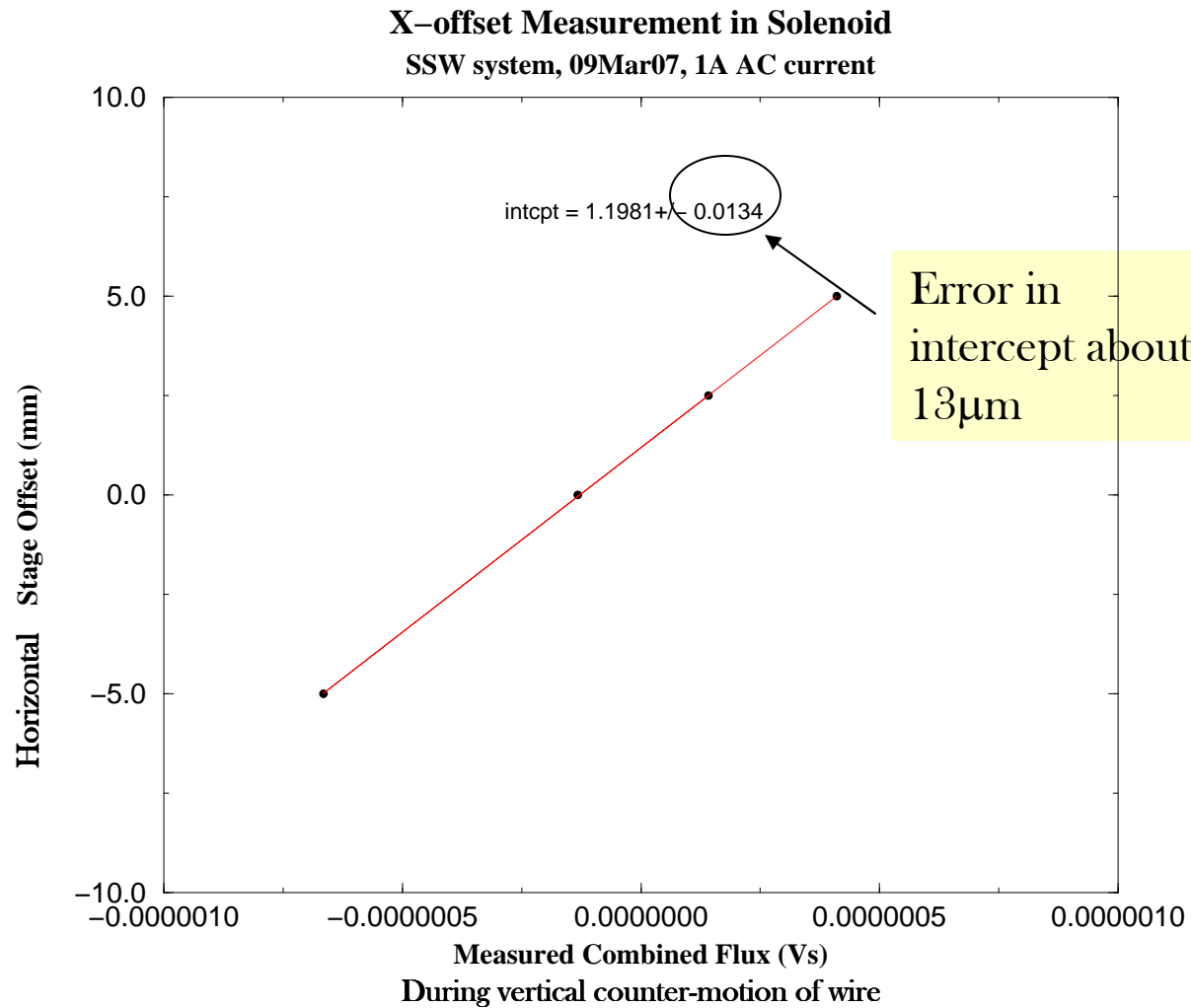


Make counter-wire flux meas (with usual +/- motions) horizontally as a function of vertical stage offset to find center

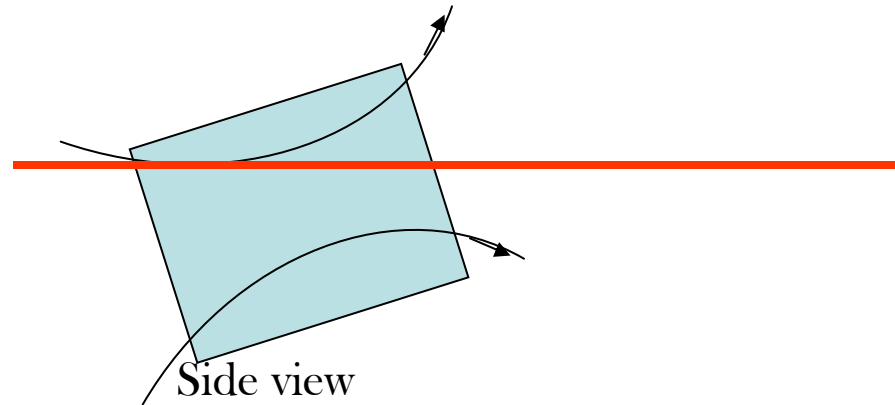
Vertical center determination



...similar for x

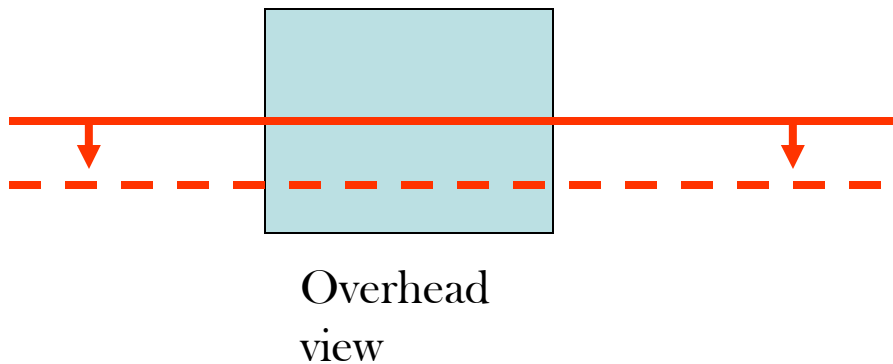


Angle offset



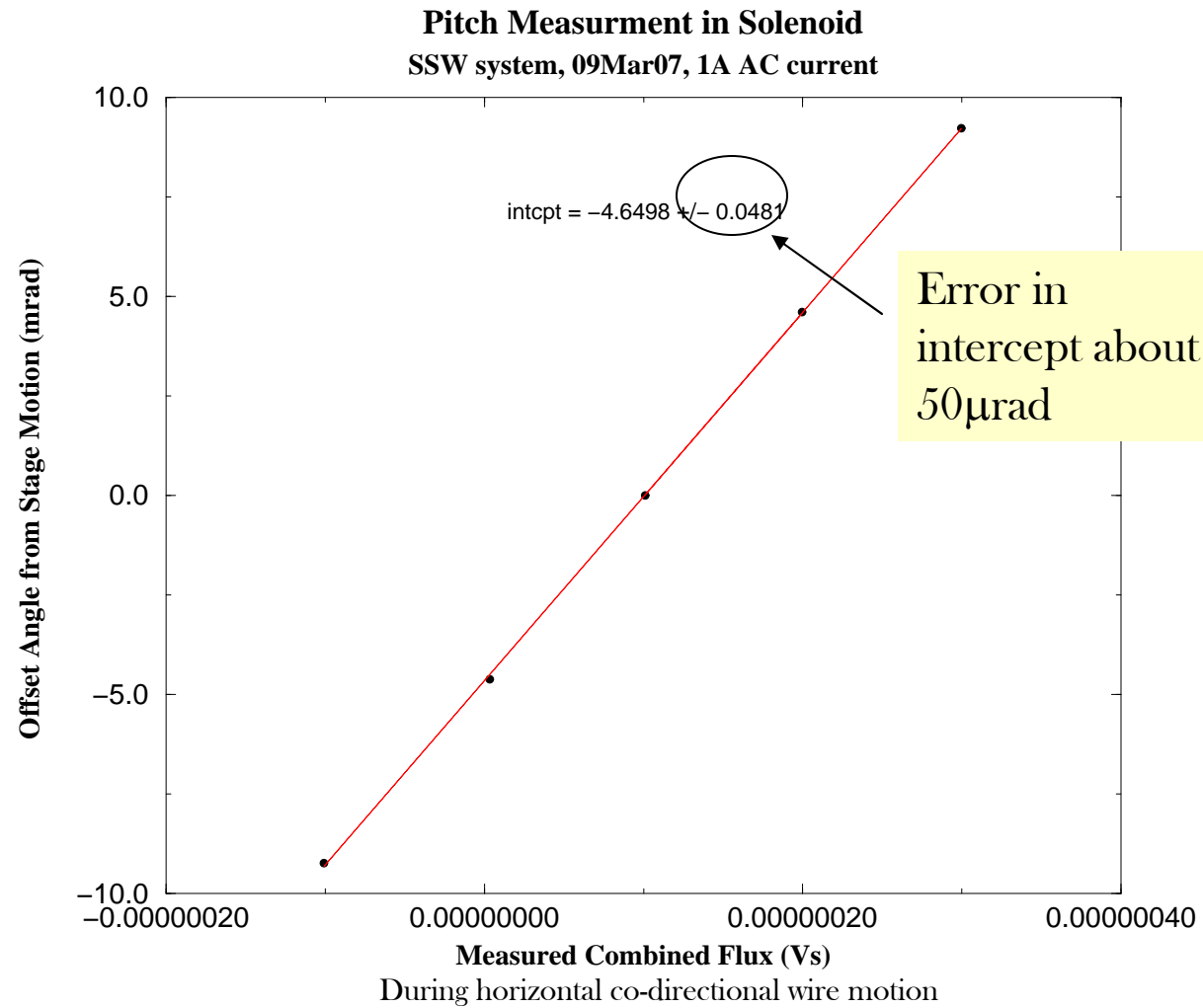
Magnet pitch -

Horizontal wire motion cuts flux lines if magnet is pitched wrt wire (flux 0 if not pitched)



Make horizontal co-directional flux meas as function of wire pitch (caused by vertical stage counter-dir offset) to find magnet pitch

Pitch



Conclude:

Can use *SSW* to align to the **HINS** solenoid axis at level of 10 microns and 50 microrad

AC measurements were used, but will work **DC** as well with large enough signal size.