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X-Flare Analysis of Solar Cycle 23 Using Solar and Heliospheric Observatory (SoHO) Data[1] FERNANDO DELGADO, ALEKSANDRA ANDIC, R.T. JAMES MCATEER, New Mexico State University — We identify trends and patterns that may be used in automated flare detection algorithms with real-time data from the Solar Dynamics Observatory (SDO). We analyzed the magnetic field intensities and areal dimensions of active regions that produced the 30 strongest X-class flares during solar cycle 23 (1996-2007). The data were obtained through SoHO's Michelson Doppler Imager (MDI). The magnetograms underwent thresholds to identify positive and negative polarities, 1000 and -1000 Gauss respectively. Each active region was observed several days before and up to a few hours after the flare occurred. Based on preliminary results, about one third of the flares show a similar linear growth pattern in which the flare occurs near or at the peak of growth.

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