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Geotail observations of the average location of the near-Earth neutral line

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Direct observations of the near-Earth neutral line in the magnetotail are extremely rare due to sparse spatial and temporal spacecraft coverage. While such observations may elude us, the approximate location of the neutral line can be inferred from spacecraft observations of flux ropes and Travelling Compression Regions (TCRs). The direction of motion of these structures is dependent upon which side of the dominant x-line they were formed, and by examining many observations over a sufficiently long time period, the reconnection site's average location can be determined. We will present our methodology for selecting and interpreting the flux ropes and TCRs, our analysis of the x-line location at the two extremes of the solar cycle, and our conclusions regarding the consequences of solar activity on magnetotail dynamics.