

Human Crossover Interference

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Abstract:

Statistical analyses of human genetic data are generally performed with the assumption that the locations of crossovers in meiosis follow a Poisson process. Data on experimental organisms suggest that meiosis exhibits positive crossover interference: crossovers tend not to occur too close together. Using data on more than 8,000 genetic markers typed on eight large families, we have demonstrated the presence of positive crossover interference in human meiosis and further characterized its extent. We fit a gamma renewal process, which had previously been found to serve as a good model for meiosis in experimental organisms. We will briefly describe several surprising findings that came out of this work, emphasizing the importance of pursuing aberrations in data. This is joint work with James L. Weber, Marshfield Medical Research Foundation.