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OligoNucleotide Microarray Image Analysis

Design a new probe intensity extraction algorithm for high density oligonucleotide microarray image (Affymetrix) by solving partial differential equations with finite difference method. Use microarray simulation model to validate different probe intensity extraction and signal summarization algorithms, including MAS5, ACWE, SBC and M_SBC. Use applied statistics to analyze the comparison results, such as repeated measurement of ANOVA, non-linear regression and Non-parametric Statistics. Design a new hybrid probe intensity extraction algorithm based on the comparison results.