GRIDDING THE SPOT CENTERS OF MICROARRAY IMAGES (WedPmOR2)

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Abstract :

We use an optimization technique to accurately locate a distorted grid structure in a microarray image. By assuming that spot centers deviate smoothly from a checkerboard grid structure, we show that the process of gridding spot centers can be formulated as a constrained optimization problem. The constraint is equal to the variations of the transform parameter. We demonstrate the accuracy of our algorithm on two sets of microarray images. One set consists of some images from the Stanford Microarray Database; we compare our centers with those annotated in the Database. The other set consists of oligonucleotide images. We compare our results with those obtained by GenePix Pro 5.0. Our experiments were performed completely automatically.

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