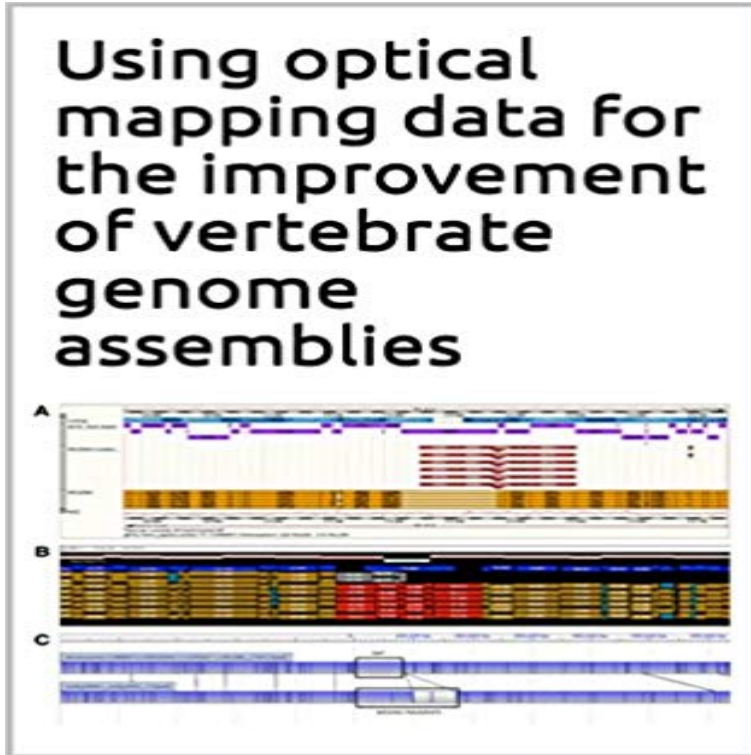


Using optical mapping data for the improvement of vertebrate genome assemblies



Optical mapping is a technology that gathers long-range information on genome sequences similar to ordered restriction digest maps. Because it is not subject to cloning, amplification, hybridisation or sequencing bias, it is ideally suited to the improvement of fragmented genome assemblies that can no longer be improved by classical methods. In addition, its low cost and rapid turnaround make it equally useful during the scaffolding process of de novo assembly from high throughput sequencing reads. We describe how optical mapping has been used in practice to produce high quality vertebrate genome assemblies. In particular, we detail the efforts undertaken by the Genome Reference Consortium (GRC), which maintains the reference genomes for human, mouse, zebrafish and chicken, and uses different optical mapping platforms for genome curation.

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