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标题：**pRPL 2.0: Improving the Parallel Raster Processing Library**

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摘要：This article presents an improved parallel Raster Processing Library – pRPL version 2.0. Since the release of version 1.0, a series of modifications has been made in pRPL to improve its usability, flexibility, and performance. While retaining some of the key features of pRPL, the new version has gained several new features: (1) a new DataManager class has been added for integrated data management, and to facilitate data decomposition, assignment mapping, data distribution, Transition execution, and load-balancing; (2) a GDAL-based raster data I/O mechanism has been added to support various geospatial raster data formats, and provide centralized and pseudo parallel I/O modes; and (3) a static load-balancing mode and a dynamic load-balancing mode using the task-farming technique are provided. A parallel zonal statistics tool and a parallel Cellular Automata model were developed to demonstrate the usability and perfor- mance of pRPL 2.0. The experiments using the California datasets showed that the performance altered when different pRPL options (i.e. load-balancing mode, I/O mode and writer mode) were used for differ- ent algorithms, datasets, and varying numbers of processes.

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