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LIGO-VIRGO Collaboration

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A large, geographically distributed scientific collaboration like LIGO-Virgo poses a number of interesting and difficult data analysis computing challenges, both technical and organizational in nature. Our scientific results depend on our ability to coordinate the activities of over 100 scientists at over 100 institutions to efficiently exploit large, complex computing resources, and our success addressing these computing challenges has directly contributed to our recent discoveries. Our data analysis computing goals, which are often in conflict, include maximizing scientific output through computational efficiency, human efficiency, technical and methodological innovation, easy of use, flexibility, and reliability. I will discuss some of LIGO-Virgo's data analysis computing challenges, including scientific prioritization, resource allocation, optimization, development practices, distributed workflow execution, data movement, job scheduling, and accounting. We have many remaining computing challenges and much to learn from other collaborations and projects. This talk will outline some of these successes and challenges and solicit ideas for new solutions.

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