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GPUs in gravitational wave data analysis

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Searches for gravitational-wave signals from inspiraling black hole or neutron star binaries push the limits of currently available computing resources with conventional CPU-based computer clusters. Previous efforts have used the advantages associated with GPU-hardware to accelerate computationally-intensive portions of the searches by porting those computations to run on the GPUs. Additionally, future computational savings could be obtained through further code optimization and novel analysis techniques, which will of course be impacted by the technologies available in the coming years. In this presentation, I will summarize the LIGO Scientific Collaboration and the Virgo Collaborations' efforts to accelerate inspiral searches using GPUs and will discuss how these efforts will be focused in the coming years.

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