**Hardware/Hybrid Accelerated Cosmology Code**Nicholas Frontiere, JD Emberson, Salman Habib, Adrian Pope, Hal Finkel, Katrin Heitmann, Steve Rangel, David Daniel, Patricia Fasel, Vitali Morozov, Tom Uram, Silvio Rizzi
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**Abstract**

In response to the plethora of data from current and future large-scale structure surveys of the Universe, sophisticated simulations are required to obtain commensurate theoretical predictions. We have developed the Hardware/Hybrid Accelerated Cosmology Code (HACC) capable of sustained performance on powerful and architecturally diverse supercomputers to address this numerical challenge. Presented here are performance results from multiple implementations of HACC designed for optimal performance on the Summit and Theta supercomputers.