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## Streaming hardware compressor co-design using the Chisel hardware construction language

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Data compression is becoming a major topic in HPC, remote sensors, and scientific instrument communities. As a result, various software compression software has been developed. In addition, there is a huge interest in applying scientific data compression for real-time and streaming processing scenarios. However, software-only implementations may be challenging or impossible to meet the real-time streaming requirements. Therefore, we are seeking paths to hardware-only or software-hardware hybrid implementation. The opportunities are to study optimal hardware implementation strategies for scientific data compressors and implement/simulate hardware compressors efficiently in a software-developer-friendly manner. We employ emerging hardware construction language for exploring hardware compressor designs. In this short talk, I will briefly introduce Chisel and summarize the streaming hardware compressor blocks we have been designing.

### JLESC topic

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