

Scientific data compression

Overview

This is an on-going research project to explore the potential for applying lossy compression methods to geosciences data sets. Much of the current work focuses on wavelet-based compression strategies, such as those used in a variety of consumer media applications (e.g. video, music, and images). This work is an informal collaboration involving numerous internal and external partners including: NREL, U. of Oregon, DKRZ, U. of Calgary, and CISL's ASAP group. In 2015 we hosted a PhD summer student visitor, Samuel Li, from the U. of Oregon. While at NCAR Samuel evaluated two state-of-the-art wavelet encoders (SPIHT and SPECK). In collaboration with ASAP these encoders were compared with a variety of compression methods evaluated in Alison Baker et. al's 2013 paper. The SPIHT and SPECK encoders appear superior to the methods reported by Baker et. al., and we plan a follow up paper early next year. A report on Samuel's summer work is available as an attachment.

An earlier collaboration with the U. of Oregon resulted in an LDAH submission that was accepted for publication and presented in a talk at IEEE Vis this October.

Schedule

on-going

Links

[evaluate_SPIHT_SPECK.pdf](#)