Special Issue

Big Data and Machine Learning in Earth Sciences

Message from the Guest Editors

If big data challenges can be summed up as "to cost-effectively scale computation and storage in the face of ever-increasing data volumes and varieties with an ever-escalating demand for velocity", we posit that these challenges have been present since the dawn of digital computing for Earth science. Our desire for better fidelity from predictions urges us to incorporate into numerical models evermore comprehensive physical interactions with evermore refined intricacy, which compels evermore extensive and expansive observations with evermore detailed focus, further intensifying the challenge. As a result, another type of challenge arises, i.e., the wish to realize the full value from the deluge of data generated by models and observations. Unfortunately, until recently, we have had to rely mostly on human beings' cognitive faculty.

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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