LANDSLIDES AND ROCKETS: DATA, ML AND UQ FOR COUPLED MULTISCALE PHYSICS

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ABSTRACT

Models of complex multi-scale interconnected systems like debris flows[1], rocket motors routinely embed sub-models and are built with sparse and uncertain data[2] increasingly using ML based modeling in characterizing data and sub-models. We will describe in this talk approaches and methods we have developed and customized for UQ on such systems. In particular, we will describe innovative approaches to UQ for such systems developing good surrogates that respect the multiscale structure of the data[3], uncertainty aggregation methods and data flows.

REFERENCES

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