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Teaching Quantitative Thinking in Geoscience with MATLAB

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Teaching computation and geoscience domain knowledge in a single course is challenging and, thus, requires significant forethought and a well-organized course framework. Some of these courses also mix in complex mathematics and unfamiliar hardware and instrumentation technology. The expectation to master all those skills and retain the information, let alone apply it in future courses and jobs, can be a daunting task for professors, as well as for the students who tackle these hybrid classes.
Through a series of 3-day in-person workshops, faculty across the geoscience disciplines and allied science fields have collaborated to produce on-line teaching resources and a community of peers to support these multi-faceted but essential Geoscience courses. These resources support Geoscience and Science educators seeking to update their curriculum and even create whole new courses. Topics addressed include approaches to teaching, best practices for working group design, empowering students to self-advocate, retaining computational skills, and coordinating curriculum across the department and even cross department.
The poster will show the resources available to educators – teaching activities including MATLAB code, presentations on teaching approaches, and course curriculum, among others. It will also highlight relevant MathWorks tools for learning and teaching, from online videos, to free, interactive MATLAB tutorials (MATLAB Onramp and more), to autograding software for MATLAB code (Cody Coursework), with associated publicly available homework problem sets.
Visitors can learn how to access these online resources, share their teaching challenges, and find out about plans for future workshops.