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INVITED SPEAKER: Paradigms for Electronic Structure Codes

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Abstract content
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In most solid state physics research groups today powerful desktop computers and sophisticated, user-friendly electronic structure codes (ESC) based
on density functional theory (DFT) enable students to study complex physical systems with ease. During the course of their study these students learn
about DFT and how to use ESC, but seldom get an opportunity to understand the algorithms that make these codes accurate and efficient. As a result
they do not develop the necessary computational skills that make
them transferable to other scientific working environments. In an attempt to
address this, we have developed paradigms to the electronic structure problem
that involve self-contained mini computational problems that enhance students' understanding of particular key aspects of ESC.
In this talk we give an overview of the mini projects developed thus far as
well as those we will work on in future.

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