Robust Computational Physics and Automated Sanity Checks[1]
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— A good computational physics course teaches students to say "well that's completely wrong" anytime the computer gives them a result. Once cast in doubt, it is the scientist's responsibility to convince themselves that the result is in fact correct. As programs become more complicated, it usually becomes more difficult to guarantee that the final output is right. I will present a new framework that automates the production of robust, high quality Fortran code. The talk will include a brief overview of good coding principles and a demonstration of the most useful features of the framework that help automate implementation of these principles. By providing an XML-based documentation standard and automated unit testing, fortpy[a] helps researchers ensure that their code produces accurate physics and is easier to use by others.

[a] Conrad W. Rosenbrock *Fortpy Auto-completion and Automated Unit Testing for Fortran: https://github.com/rosenbrockc/fortpy*

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