Title of Poster

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Currently, advanced reactor technology has progressed exponentially in the last decade. When designing a nuclear reactor, an effective tool for basic core analysis, supporting the initial design phase of new concepts, and facilitating the training of new engineers, would prove valuable. This is the motivation for developing TACOCAT. TACOCAT, or Thermal hydrAulic COre Calculations using single heAted channel meThod, is a sourced Python code that is accessible on GitHub. This code is currently being developed at Virginia Commonwealth University. The primary objective of this solver is to support low-fidelity design analysis for reactor concepts, helping assess the feasibility of coolant selection, neutron flux profile, cladding material, and operating conditions without exceeding material limits for both conventional and cutting-edge reactor designs, focusing on single and dominant channels.