Validation of computation by Experiment for the VSim and USim Codes JOHN CARY, Univ of Colorado - Boulder and Tech-X Corporation, SN AVERKIN, KRC BECKWITH, BM COWAN, TG JENKINS, SE KRUGER, M KUNDRAPU, C ROARK, SW SIDES, Tech-X Corporation, GR WERNER, Univ of Colorado - Boulder — The Tech-X codes, VSim and USim, have been used for modeling a wide range of plasma systems, including low-temperature plasma systems. VSim works on a structured cartesian or cylindrical mesh, has electrostatic and electromagnetic solvers, fluid models, and particle models. USim works on an unstructured hex mesh, has solvers for electromagnetics and fluids, and is particularly suited to studying high-Mach flows. VSim is more oriented towards low-density, weakly collisional systems, while USim is more oriented towards high-density, collisional systems. These codes have been tested on a number of standard problems in low temperature plasma, including the GEC Reference Cell and the Turner benchmarks, as well as being tested for solution accuracy for electromagnetics of structures. This talk will briefly describe the physics implementations in these codes, then show comparisons with experimental data.

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