Simulation of sputter deposition in dc magnetrons[1] EVSTATI EVSTATIEV, BRIAN CLUGGISH, FAR-TECH, Inc. — Material sputter deposition has a multitude of industrial applications. Our goal at FAR-TECH, Inc., is a complete numerical simulation of a dc magnetron device. We intend to modify existing FAR-TECH, Inc. code to include flexible geometry manipulation, the most current atomic physics data, add transport of neutral atoms across the device, and model deposition on the substrate. Currently, dc magnetron simulation codes have limited geometry manipulation capabilities; however, this is important if design optimization is intended. Another uncommon feature in dc magnetron simulation codes is parallel performance. Since PIC simulations may take extremely long times (weeks), we are parallelizing our codes to achieve shorter run times. (Codes based on hybrid models perform faster, but have the disadvantage of having to know accurately the diffusion coefficients of electrons across the magnetic field lines.) We report preliminary results of this effort.

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