

## PRESENTATION

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### Asim Mirza

boltzplatz GmbH | Co-Founder

Dr. Asim Mirza studied aerospace engineering at the University of Stuttgart. He completed his PhD at the Institute for Space Systems, during which he specialized in the simulation of gas flows on a microscopic level and became one of the first developers of PICLas, an open source particle simulation software. Now, he is co-founder of the company boltzplatz GmbH which supports companies that tackle complex physical conditions with numerical simulations of rarefied gas and plasma flows.



### ***" The DSMC Method - A Simulation Approach for Low Pressure ALD Processes "***

March 25, 2021 | 15:30 – 15:50

The Direct Simulation Monte Carlo (DSMC) method is a powerful simulation model that treats gas flows on a microscopic level. It models gas flows using simulation particles that represent a large number of real molecules in a probabilistic approach to solve the Boltzmann equation approximately. Hereby, no continuum assumptions are made, so that rarefied gas flows can be simulated correctly even under non-equilibrium conditions. The DSMC method has been used in a wide range of engineering challenges ranging from atmospheric re-entry missions to flows in micro-electro-mechanical systems. An introduction to this method is given in this talk. It is outlined how the DSMC method could be utilized to simulate flows in low-pressure ALD processes, where classical CFD approaches are invalid. Additionally, the new open source software PICLas, which includes a state-of-the-art DSMC module, is introduced briefly.