



Simulation of Plectoneme Formation

Topic Area:
Modeling & Simulation

Partner	Company
	
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Project Summary:

Successfully performed 3D MHD simulations of MOCHI experiment, validating observations of stable, collimated, magnetized plasma jets. Plectoneme (double-helical magnetic Taylor state) inside the jet observed in experiment.

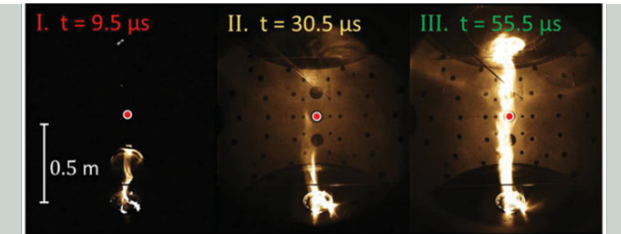
Fusion Impact:

MOCHI-type jet is a key ingredient in our new compact fusion concept. Simulations significantly reduced risk by confirming design of new fusion concept exploration experiment (ECLAIR).

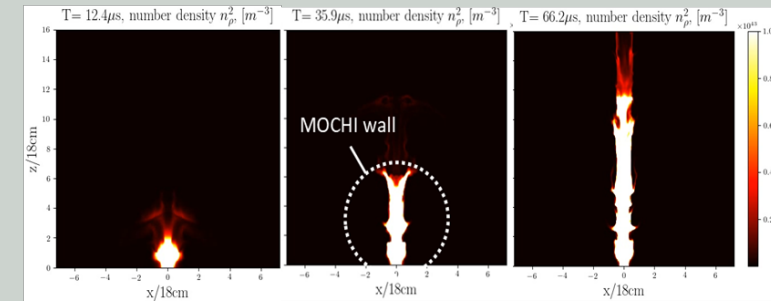
Business/Market Impact:

Results led to company successfully raising private funding (\$2.4M pre-seed end of 2021) to build ECLAIR.

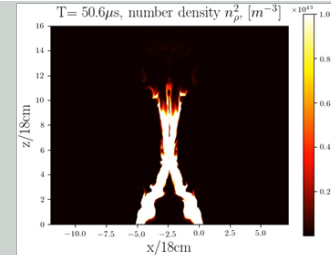
MOCHI experiment



3D MHD simulations of MOCHI supporting ECLAIR design



ECLAIR fusion concept experiment preliminary configuration



Period of Performance:	Federal Share:	Cost Share:
June 2020-June 2021	\$200,000	\$40,000