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Towards multi-fluid simulations of the solar chromosphere

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Solar chromosphere has been at the focus of solar physics studies for decades, but its heating mechanisms are still unknown. Chromospheric plasma is strongly stratified, weakly ionized and not completely collision coupled. In this talk I will overview our recent results of the modeling of solar chromosphere, comparing a more standard single-fluid approach and a more novel multi-fluid approach. I will describe the challenges posted by the multi-fluid modeling, that still need to be overcome, and will talk about possible observables for the multi-fluid effects.

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