

# Suprathermal Ions Associated with Solar Wind Structures.

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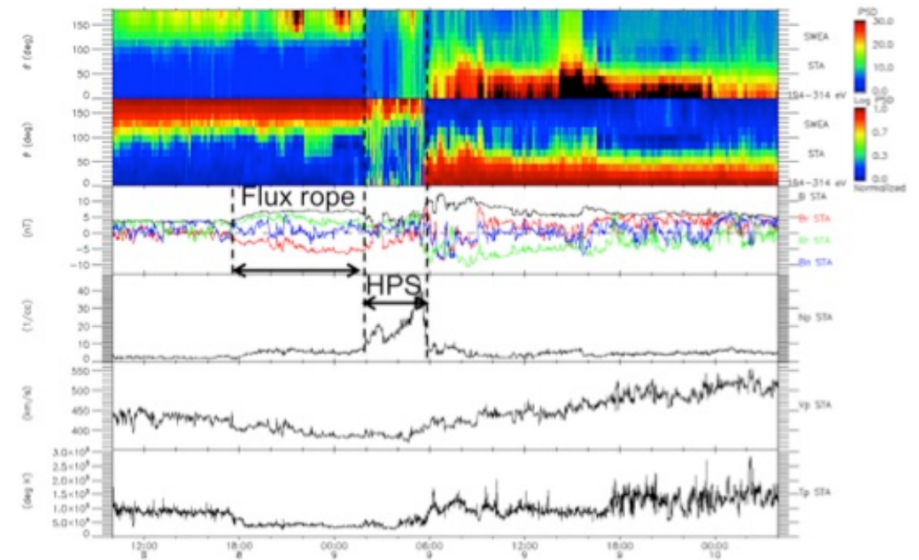
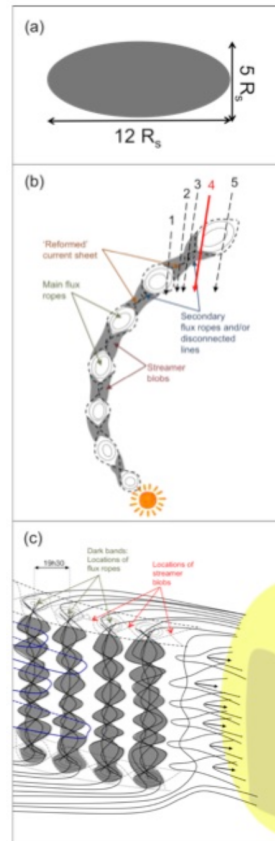
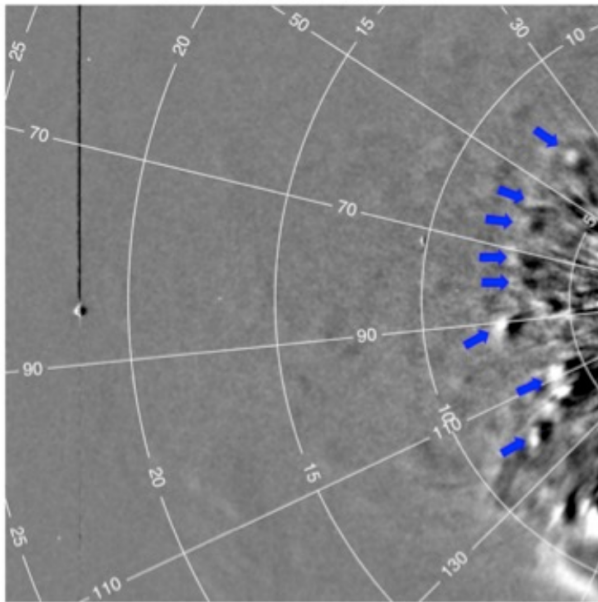
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HIS-SWT-March. 2018, Florence, Italy

# Density Structures Released in the Slow Solar Wind

*Sanchez et al., 2017*

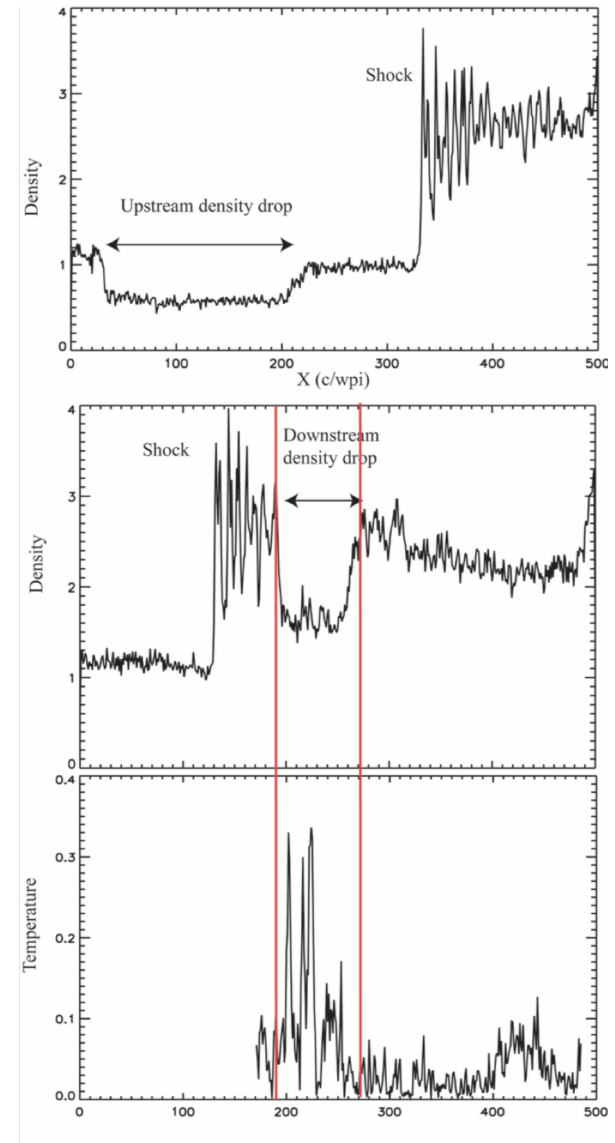
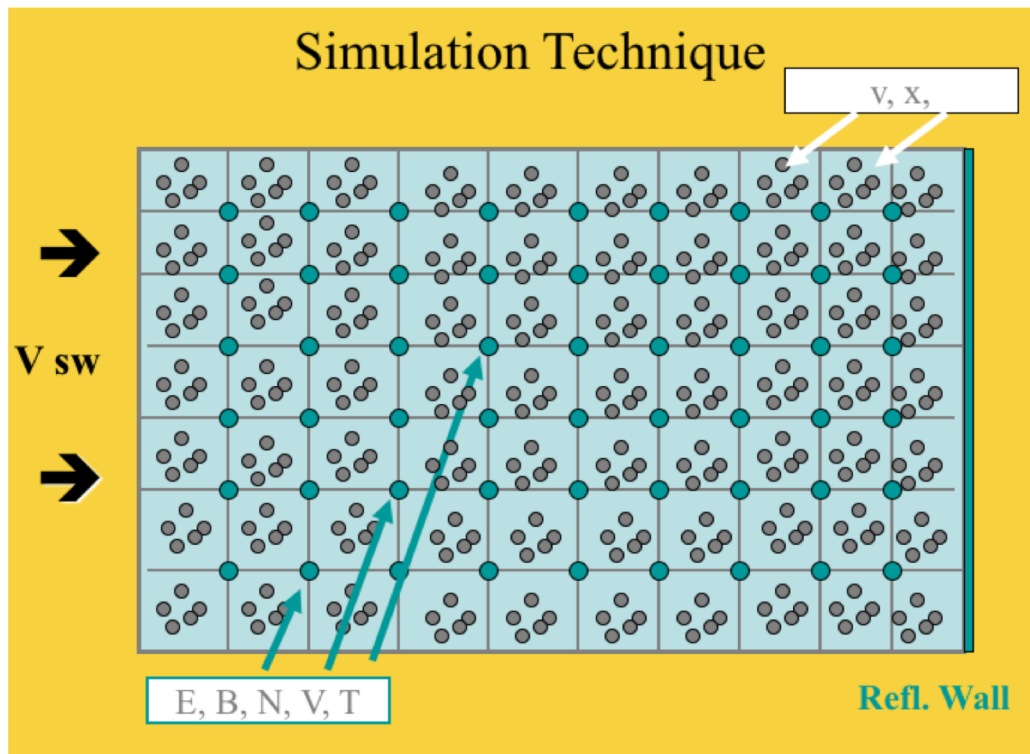
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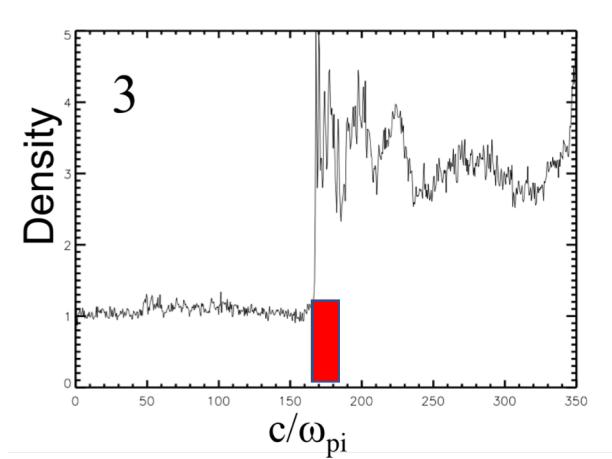
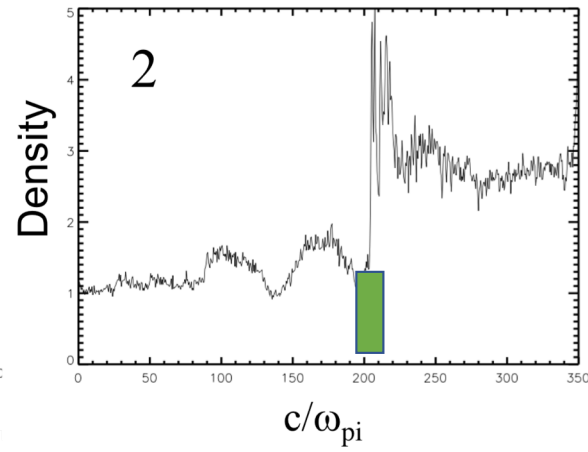
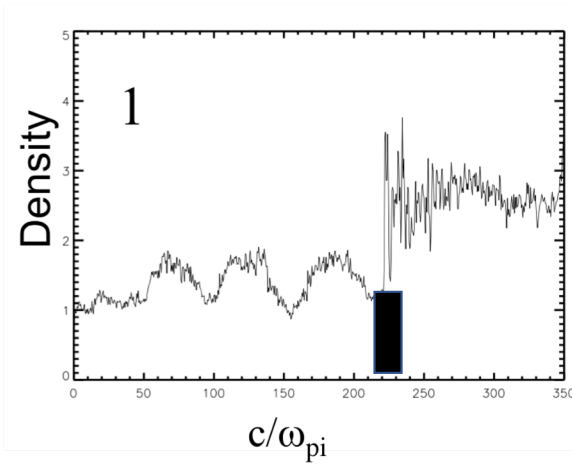
# 2D Hybrid Simulations

- Density Depressions and Enhancements

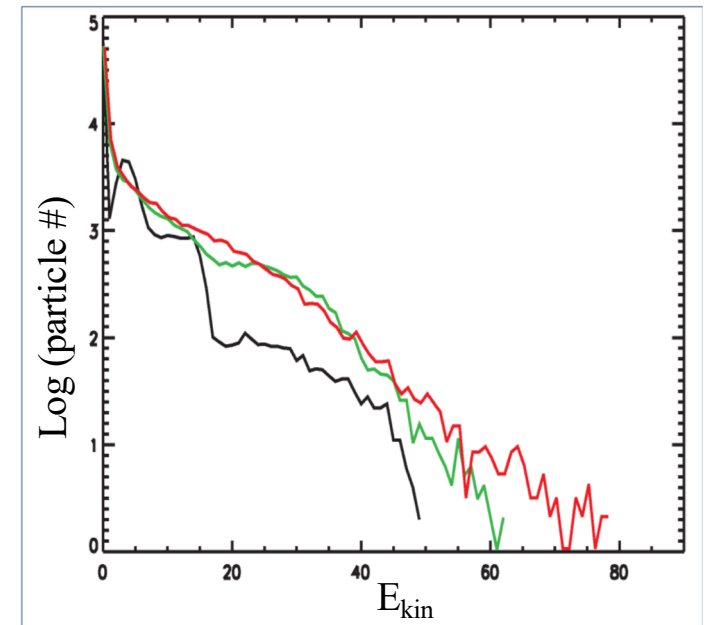
# Density Depressions:



A series of density enhancements:

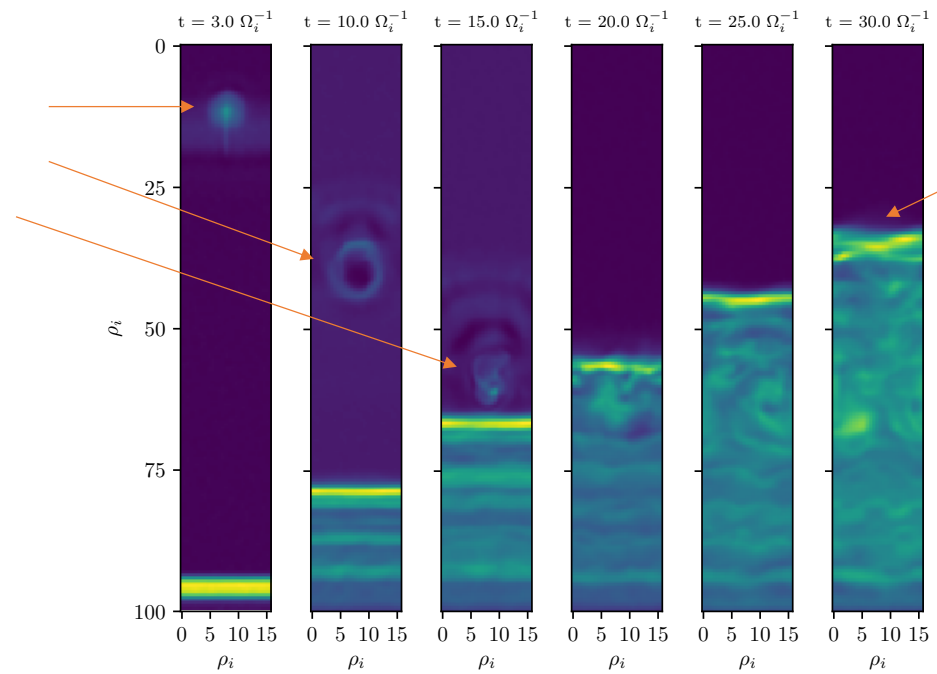


Spectrum of suprathermal ions



# 3D Hybrid Simulations

Localized density structures entering a perpendicular shock.



Local bow shock structure becomes unstable.

## Summary:

- Density structures entering a shock cause severe changes of the local shock structure which is associated with a release of suprathermal ions.
- These structures persist downstream in 2D.
- We have developed a 3D parallel hybrid code and we have first results.
- Localized 3D structures are more complex and are currently under investigation.