



## **Beam tracking strategies for studies of kinetic scales in the solar wind with THOR-CSW**

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Modern plasma spectrometers for monitoring the solar wind attempt to intelligently track the energy and direction of the solar wind beam in order to obtain solar wind velocity distributions more efficiently. Such beam tracking strategies offer some benefits, but also have their limitations and drawbacks. Benefits include an improved resolution and/or a faster velocity distribution function acquisition time. Limitations are due to instrument characteristics that tend to be optimized for a particular range of particle energies and arrival directions. A drawback is the risk to miss an important part of the velocity distribution or to lose track of the beam altogether. A comparison is presented of different beam tracking strategies under consideration for the THOR-CSW instrument in order to highlight a number of design decisions and their impact on the acquired velocity distributions. The gain offered by beam tracking in terms of increased time resolution turns out to be essential for studies of solar wind physics at kinetic scales.