

# Supporting Information for "F<sub>1</sub> region ion composition in Svalbard during the International Polar Year 2007-2008"

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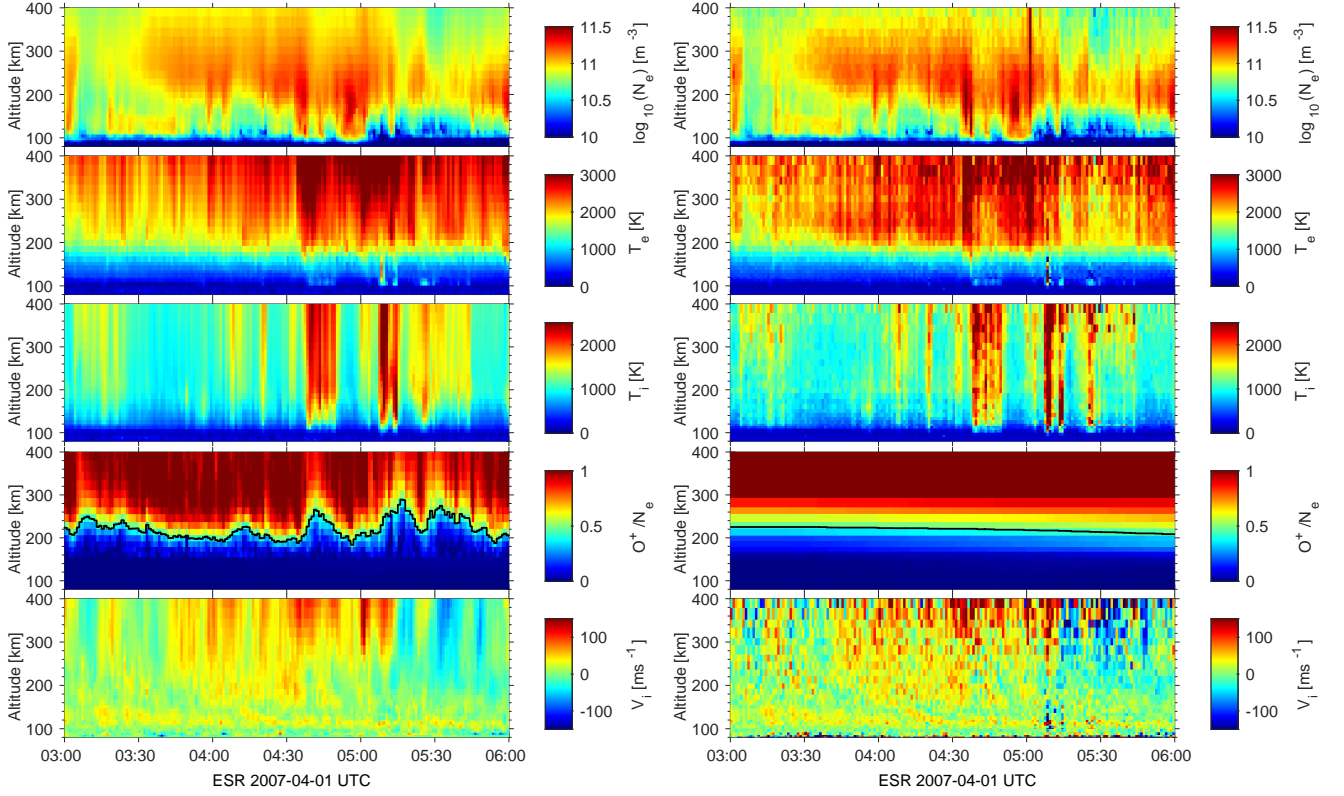
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1. Figure S1

## Introduction

This supporting information contains one figure, which shows the plasma parameter plot in Figure 2 of the paper side-by-side with the corresponding result from a standard GUISDAP fit without BAFIM or IDC.



**Figure S1.** Left: An example of plasma parameter fit results using BAFIM and IDC with GUISDAP from April 2007. From top to bottom, the panels are electron number density, electron temperature, ion temperature,  $O^+$  ion fraction, and line-of-sight plasma velocity (positive away from the radar). The black line in the fourth panel is the molecular-to-atomic transition altitude  $z_{50}$ . Right: The corresponding GUISDAP fit result without BAFIM and IDC. The  $O^+/N_e$  ratio in the fourth panel is not a fit result, but from the IRI-2020 model.