

EISCAT_3D

Section 1

GEMINI

Section 2.1

Obtain samples

$\mathbf{v}_i, cov(\mathbf{v}_i), n, var(n)$

Section 2.2

E3DOUBT

Add noise

Hatch et al. 2024

Pre processing

Lompe:
continuous representation of
 $\mathbf{v}_\perp, cov(\mathbf{v}_\perp)$ @ 200 km

Section 2.3

\mathbf{j}_\perp and $cov(\mathbf{j}_\perp)$ estimate for
each sample point

Section 2.4

$\mathbf{j}_\perp = ne(\mathbf{v}_{i,\perp} - \mathbf{v}_{e,\perp})$ or $\mathbf{j}_\perp = \sigma_P \mathbf{E}' + \sigma_H \hat{\mathbf{b}} \times \mathbf{E}'$

E3DSECS

Section 3

Output:

Volumetric reconstruction: \mathbf{j} and $cov(\mathbf{j})$

Section 4 and 5