For average reference EEG, the general solution for mínimum norm

 (eq 11)

Where *φ* is surface recorded potential, K is leadfield matrix, alpha is lamda.

Since sLoreta is the standardized of current density distribution given by minimum norm, we need to estimate source covariance matrix. As pointed out in the original Sloreta paper,

 (eq 15)

 (eq16)

 (eq 17)

Where ΣJ should be the prior variance-covariance matrix, Gram-matrix is shaded in blue.

So the dipolar momement is



Where 

*s*LORETA corresponds to the following estimates of standardized current density power

 (eq 20)

Therefore, I would expect that



Looking at the algorithm implemente in ft\_inverse\_sloreta, I can determine that

Variable lf is leadfield matrix, and variable invG is C of the above equations.

When I attempted to check that source covariance matrix is identity matrix, I attempted to calculate by two ways:

1. lf'\*invG\*lf after line 268 of ft\_inverse\_sloreta
2. lf(:,ii)'\*invG\*lf(:,ii) at line 267 of ft\_inverse\_sloreta (at voxel level)

I did not an identity matrix. What’s wrong? How can the unity variance of source variance matrix?