

Metabolic Connectome Construction

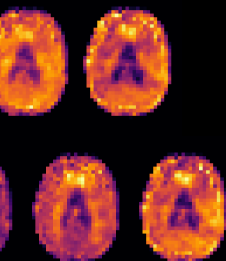
Anatomical T1w



a2

a1

MRSI Volumes
[A, Cr, GLX, Cho, Ins]



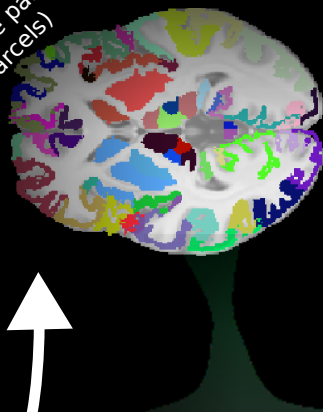
b2

Metabolic profile at parcel j
(z-score)

$$\begin{pmatrix} \frac{\overline{\text{tNAA}}}{\overline{\text{tCr}}} \\ \frac{\overline{\text{GLx}}}{\overline{\text{Cho}}} \\ \frac{\overline{\text{Ins}}}{\overline{\text{Ins}}} \end{pmatrix}_j = \mathbf{z}_j$$

Chimera volume parcellation
(n parcels)

c

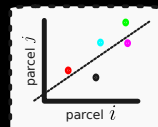


b1

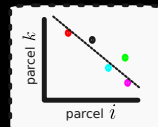
Metabolic profile at parcel i
(z-score)

$$\mathbf{z}_i = \begin{pmatrix} \frac{\overline{\text{tNAA}}}{\overline{\text{tCr}}} \\ \frac{\overline{\text{GLx}}}{\overline{\text{Cho}}} \\ \frac{\overline{\text{Ins}}}{\overline{\text{Ins}}} \end{pmatrix}_i$$

Pairwise correlation between
regional metabolic profiles



$$\text{corr}(\mathbf{z}_i, \mathbf{z}_j)$$



$$\text{corr}(\mathbf{z}_i, \mathbf{z}_k)$$

d

