

Schizotypy (SP), refers to Schizophrenia-like traits distributed in the normal population (Barrantes-Vidal et al., 2015)

Polygenic Risk Score, for Schizophrenia, (PRS), refers to the sum of logged odds ratios of alleles (SNPs), associated with Schizophrenia diagnosis, for any given person (Purcell et al., 2009)

Method

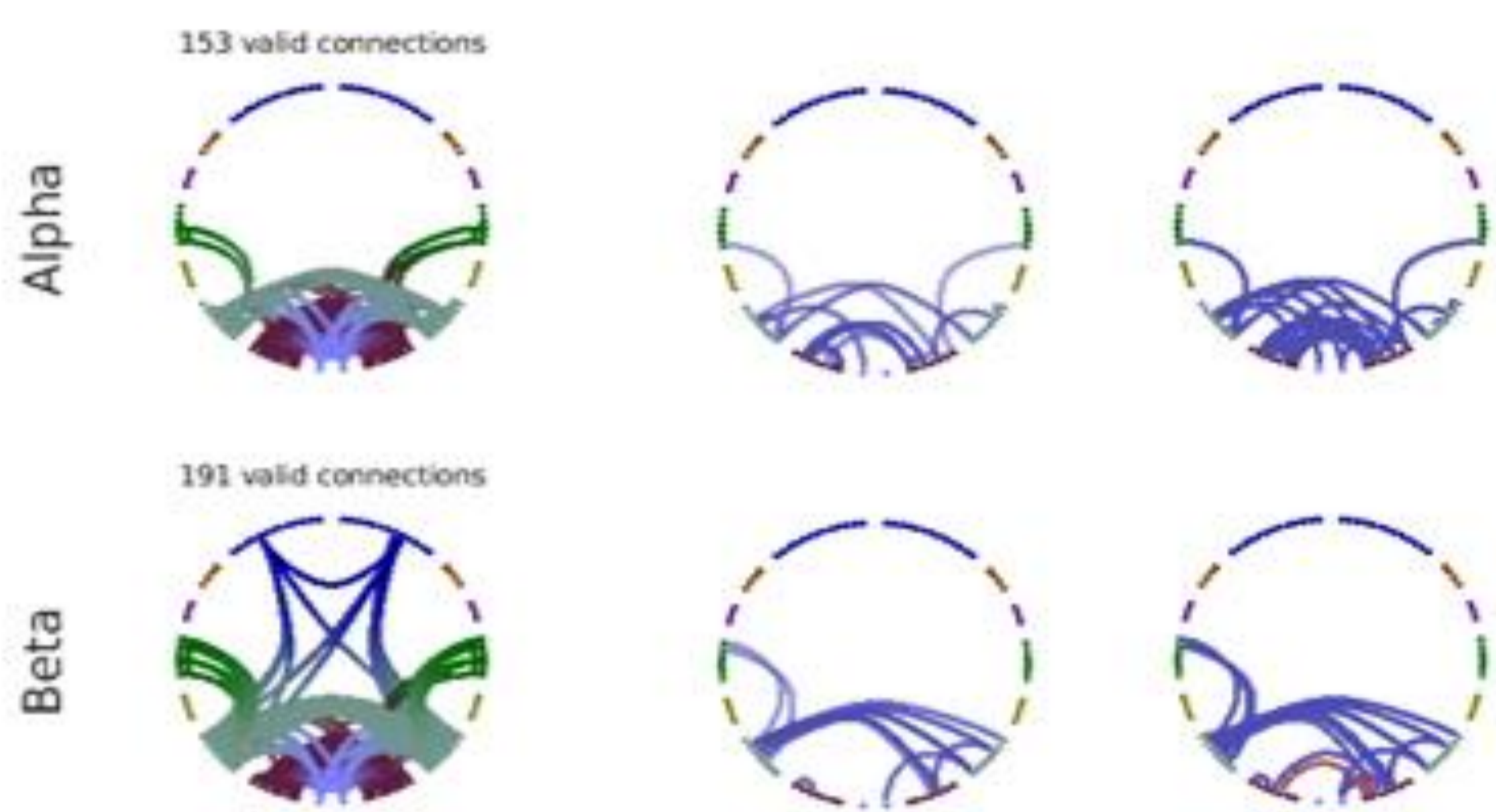
183 young healthy participants from the 100 Brains and MEG Partnership cohorts.

Resting state MEG data analysed using frequency-specific beamforming and amplitude-envelope correlation in AAL atlas space.

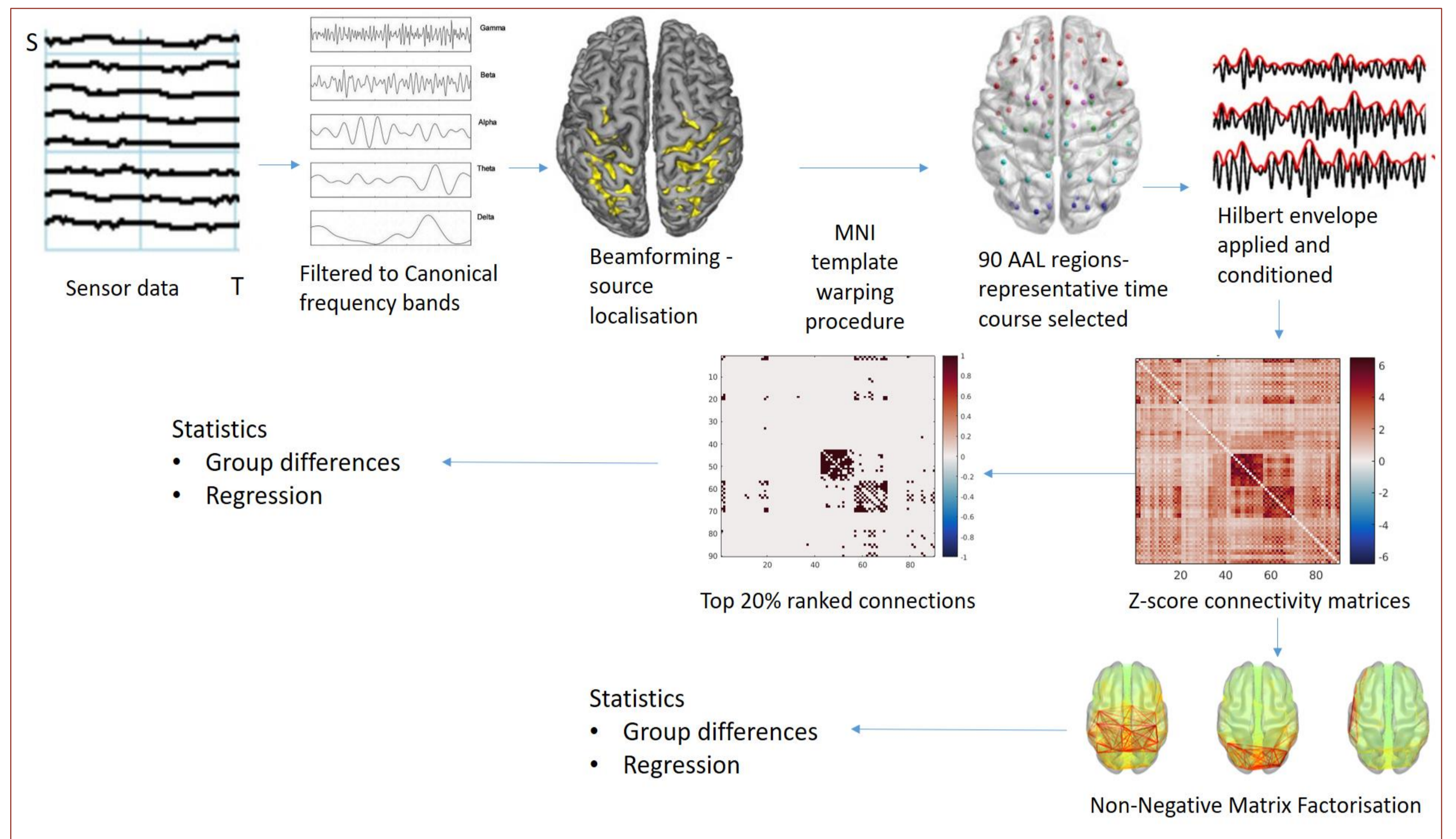
Dimension reduction of the connectivity matrices was performed using Non-Negative Matrix Factorisation (NNMF).

Regression models with SP and PRS as main predictors, and age and gender covariates, were built.

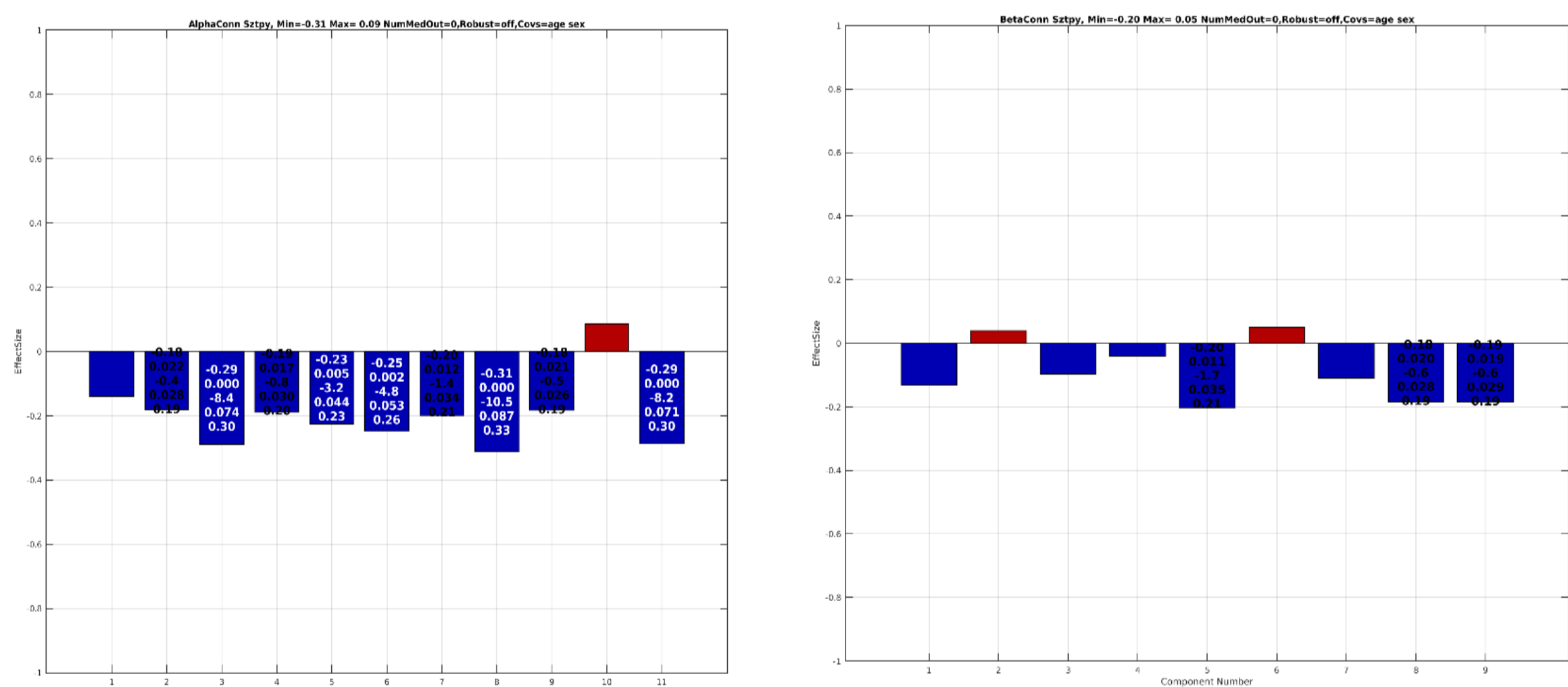
Schizotypy results: Edge Correlations



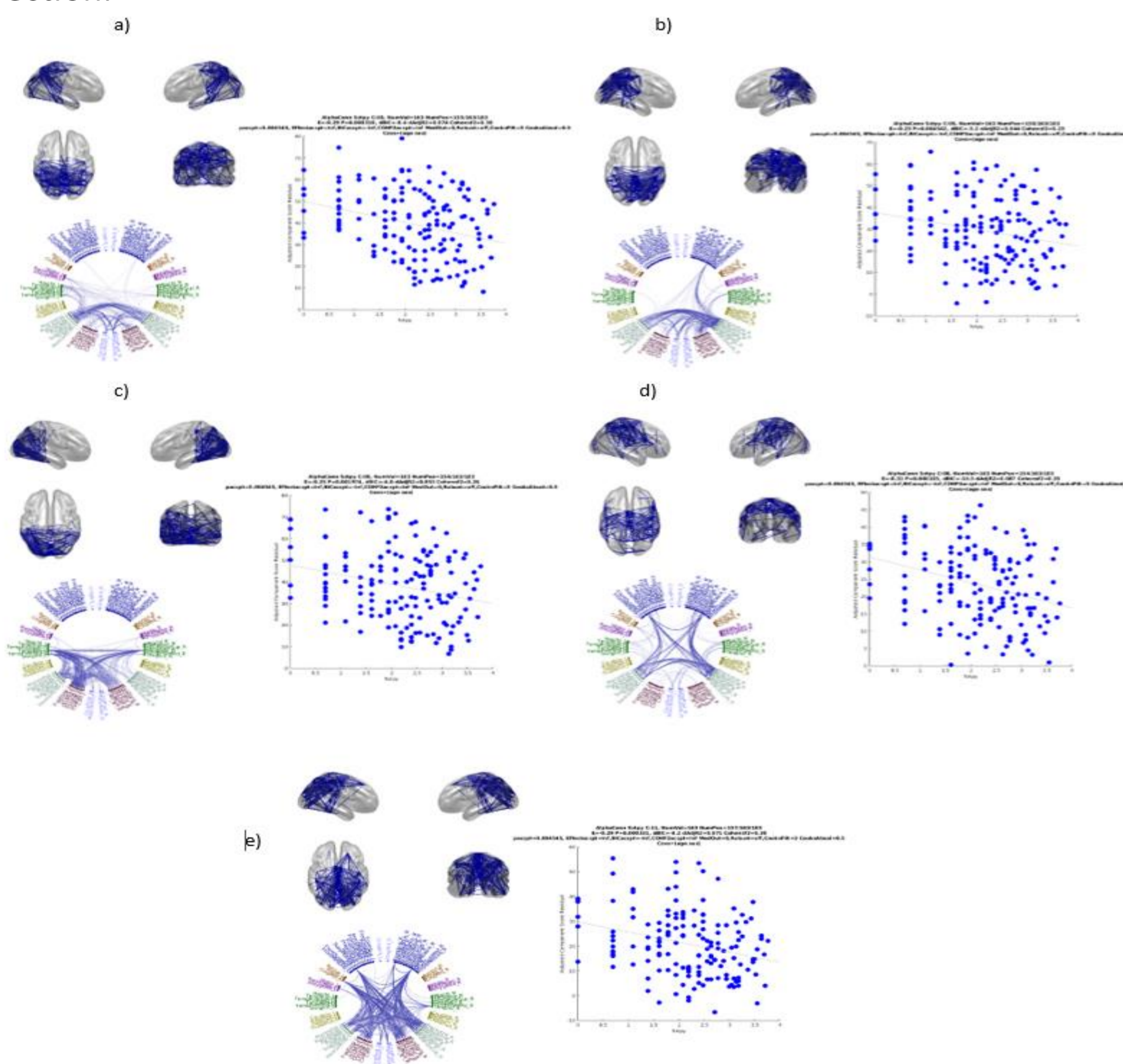
Left column: Shows valid connections (top 20% across group edge connections). Middle Column: Shows the correlation, for each valid edge, between connectivity and schizotypy (blue: negative, red: positive, $p < 0.05$, uncorrected). No edges survived correction for multiple comparisons. Right panel: cohort resampling analysis (95% confidence interval) using 5000 iterations.



Schizotypy results: NNMF Components



Left, alpha components correlation with schizotypy. Right, beta components correlated with schizotypy. CIs in white meet Bonferroni correction.



Alpha NNMF network components correlated with schizotypy.

PRS results



Left column: Shows valid connections (top 20% across group edge connections). Middle Column: Shows the correlation, for each valid edge, between connectivity and PRS (blue: negative, red: positive, $p < 0.05$, uncorrected). No edges survived multiple comparisons. Right panel: cohort resampling analysis (95% confidence interval) using 5000 iterations.

NNMF-PRS

PRS did not correlate with any alpha or beta components.

There was no significant correlation found between PRS and schizotypy scores ($r = 0.0133$, $p = 0.8$, ns).

Discussion

Schizotypy predicts reduced alpha connectivity across posterior and fronto-parietal/occipital networks.

Schizotypy effects in the alpha band, with NNMF, were robust to Bonferroni correction.

These findings are consistent with previous work, showing alpha network reductions, using NNMF, in patients with Schizophrenia (Phalen et al., 2019).

Findings are also consistent with the dysconnectivity theory of Schizophrenia (Friston & Frith, 1995).

No significant relationships found with Polygenic Risk Score, despite some associated connections suggested at the edge level.

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References

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