CONCLUSIONS

We hypothesized that selective abnormalities of large-scale brain Resting State (RS) networks occur in patients with NMOSD (N=28), isolated ON (N=11) and myelitis (N=12), according to their clinical symptomatology, and that functionally preserved networks might compensate abnormal functional connectivity (FC) in damaged networks.

In all groups, decreased RS FC correlated with poor motor performance. In myelitis patients, increased precuneus RS FC correlated with a better motor performance.

Cross-modal plasticity occurs in NMOSD, ON and myelitis patients.

Damage to disease-target sensory network is likely to elicit compensatory plasticity across brain regions, with a reorganization of sensory cortices of the spared senses to allow for better processing.