1160-58-299 **Chris Kottke*** (ckottke@ncf.edu). *Large scale metric geometry of monopoles and L^2 cohomology.* Preliminary report.

The moduli spaces M_k of $SU(2)$ monopoles on R^3 of charge k are among the oldest studied objects in gauge theory, yet open questions still remain, such as Sen's conjecture for their L^2 cohomology. I will report on two interrelated projects which make progress in this direction. The first, with K. Fritzsch and M. Singer, concerns compactifications of these moduli spaces, exibiting their hyperKähler metrics as 'quasi fibered boundary' (QFB) metrics, a metric structure which generalizes the 'quasi asymptotically locally euclidean' (QALE) and 'quasi asymptotically conic' (QAC) structures introduced by Joyce and others. The second, with F. Rochon, concerns the analysis of L^2 cohomology on QFB manifolds, which under certain conditions may be identified with certain intersection cohomology groups of associated stratified spaces. (Received August 11, 2020)