1078-35-277 **Gabriel S. Koch*** (g.koch@sussex.ac.uk), Brighton, England, **Isabelle Gallagher**, Paris, France, and **Fabrice Planchon**, Nice, France. *"Beyond L^3": a dispersive-type approach to Navier-Stokes regularity criteria in critical spaces.* Preliminary report.

We use the dispersive method of "critical elements" established by C. Kenig and F. Merle to give an alternative proof and generalization of a well-known Navier-Stokes regularity criterion due to L. Escauriaza, G. Seregin and V. Sverak, namely that 3-d solutions for which the spatial L^3-norm of the velocity remains bounded in time cannot develop a singularity. Their result came as the difficult "endpoint" of a range of regularity criteria due to J. Serrin. Our techniques can be used to show that a range of weaker Besov norms must also become unbounded near a singularity. The key tool in our proof is a decomposition into "profiles" of bounded sequences in critical spaces (e.g., L^3). (These tools also generalize a recent result of W. Rusin and V. Sverak on "minimal blow-up data" for Navier-Stokes.) This is joint work with I. Gallagher and F. Planchon, and is based on an earlier joint work with C. Kenig. (Received December 12, 2011)