1046-05-333 **Jennifer R. Vandenbussche*** (jvandenb@spsu.edu), SPSU, Mathematics Department, 1100 South Marietta Pkwy, Marietta, GA 30060, and **Douglas B. West**. *Matching extendability in the hypercube.* Preliminary report.

We explore conditions under which matchings in the d-dimensional hypercube extend to perfect matchings. In a bipartite graph G, a set $S \subseteq V(G)$ is *deficient* if the vertices of S together have fewer than $|S|$ neighbors. Let M be a matching (with vertex set U) in the d-dimensional hypercube such that $Q_d - U$ has no deficient set of size less than k. If $|M| \leq k(d-k) + \binom{k-1}{2}$, then M extends to a perfect matching. Furthermore, this result is sharp. (Received September 15, 2008)