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Qiuli Li* (qiulili@princeton.edu), Princeton, NJ 08544, and **Heping Zhang**. *On the restricted matching extension of graphs in surfaces*. Preliminary report.

A connected graph G with at least $2m + 2n + 2$ vertices is said to have property $E(m, n)$ if for any two disjoint matchings M and N of size m and n respectively, G has a perfect matching F such that $M \subseteq F$ and $N \cap F = \emptyset$. Let $\mu(\Sigma)$ be the smallest integer k such that no graphs embedded in the surface Σ are k -extendable. It has been showed that no graphs embedded in some scattered surfaces as the sphere, projective plane, torus and Klein bottle are $E(\mu(\Sigma) - 1, 1)$. In this paper, we show that this result holds for all surfaces. Furthermore, we obtain that for each integer $k \geq 4$, if a graph G embedded in a surface has enough many vertices, then G doesn't have property $E(k - 1, 1)$. (Received January 17, 2012)