1025-05-36   **Robert L Aldred**, Department of Mathematics, Otago University, Dunedin, New Zealand, **Ken-ichi Kawarabayashi**, National Institute of Informatics, 2-1-2 Hitotsubashi, Chiyoda-ku, Tokyo, 101-8430, Japan, and **Michael D Plummer*** (`michael.d.plummer@vanderbilt.edu`), Department of Mathematics, Vanderbilt University, Nashville, TN 37240. *On the matching extendability of graphs in surfaces.*

A graph G with at least $2n+2$ vertices is said to be n-extendable if every matching of size n in G extends to a perfect matching. It is shown that (1) if a graph is embedded on a surface of Euler characteristic χ and the number of vertices in G is large enough, the graph is not 4-extendable; (2) given $g > 0$, there are infinitely many graphs of orientable genus g which are 3-extendable, and given $\overline{g} \geq 2$, there are infinitely many graphs of non-orientable genus $\overline{g}$ which are 3-extendable; and (3) if G is a 5-connected triangulation with an even number of vertices which has genus g and sufficiently large representativity, then it is 2-extendable. (Received January 03, 2007)