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Sergey Kitaev, Pavel Salimov, Christopher Clark Severs and Henning Arnor Ulfarsson* (henningu@ru.is), Menntavegi 1, 101 Reykjavik, Iceland. *Restricted rooted non-separable planar maps*. Preliminary report.

Tutte founded the enumeration theory of planar maps in a series of papers in the 1960s. Such a planar map is *rooted* by distinguishing one directed edge, and furthermore, called *non-separable* if it contains no loops or cut vertices. Rooted non-separable planar maps have connections, for example, to pattern-restricted permutations, and they are in one-to-one correspondence with the $\beta(1,0)$ -trees introduced by Cori, Jacquard and Schaeffer in 1997. In this preliminary report we discuss enumeration of 2-face-free rooted non-separable planar maps and obtain restrictions on $\beta(1,0)$ -trees giving k -face-free rooted non-separable planar maps. Moreover, we discuss multiple-edge-free rooted non-separable planar maps. Finally, we enumerate so-called primitive rooted non-separable planar maps (which are a basis for generating all rooted non-separable planar maps) and discuss some equinumerous objects such as certain permutations avoiding a mesh pattern, introduced by Brändén and Claesson in 2011. (Received September 21, 2011)