Treelike Snarks

Marién Abreu*, Domenico Labbate, Università degli Studi della Basilicata;
Tomáš Kaiser, University of West Bohemia;
Giuseppe Mazzuoccolo, Università degli Studi di Verona.

In this talk we present snarks whose edges cannot be covered by fewer than five perfect
matchings. Esperet and Mazzuoccolo found an infinite family of such snarks, generalising
an example provided by Hägglund. We construct another infinite family, arising from a
generalisation in a different direction. The proof that this family has the requested property
is computer-assisted. In addition, we prove that the snarks from this family (we call them
treelike snarks) have circular flow number $\phi_C(G) \geq 5$ and admit a 5-cycle double cover.

Keywords: Snark; excessive index; circular flow number; cycle double cover.