Planar and polyhedral graphs as Kronecker and Sierpiński products

R. Maffucci[(1)], R. De March[(2)]

[(1)] Università di Torino, Italy
[(2)] Data scientist, Torino, Italy

We will discuss graph products that are planar/polyhedral. The first part of the talk focuses on the Kronecker (direct, tensor) product [2], Figure 1. We also consider simultaneous products [3].

The second part of the talk [4] is on the Sierpiński product, recently introduced in [1].

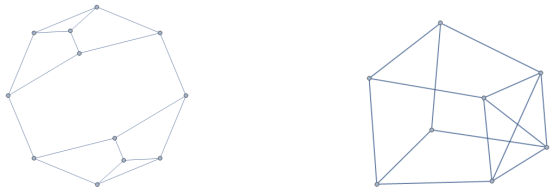

Figure 1: Illustrations of a planar (left) and a non-planar (right) factor for planar, 3-connected Kronecker products.

References

[1] J.Kovic, T.Pisanski, S.S.Zemljic, A.Zitnik. 'The Sierpiński product of graphs'. *Ars Math. Contemp.* 2023, 23(1).

[2] R.Maffucci, 'Classification and Construction of Planar, 3-Connected Kronecker Products', *arXiv:2402.01407*.

[3] R.De March, R.Maffucci, 'Cancellation and regularity for planar, 3-connected Kronecker products' *arXiv:2411.13473*.

[4] R.Maffucci, 'Regularity and separation for Sierpiński products of graphs', *arXiv:2506.16864*.