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X. Jin* (xajin@xmu.edu.cn), Xiamen, Fujian 361005, Peoples Rep of China, **Q. Yan** (qiyancumt.edu.cn), , Peoples Rep of China, and **X. Guo** (19020180155571@stu.xmu.edu.cn), , Peoples Rep of China. *On checkerboard colorable twisted duals and regular checkerboard colorable twisted duals.*

The geometric dual of a cellularly embedded graph is a fundamental concept in graph theory and also appears in many other branches of mathematics. The partial dual is an essential generalization which can be obtained by forming the geometric dual with respect to only a subset of edges of a cellularly embedded graph in terms of ribbon graphs. Twisted duality is a further generalization from combining partial Petrials with partial duals. In this talk, we answer two problems raised by Ellis-Monaghan and Moffatt in [Trans. Amer. Math. Soc. 364(3) (2012), 1529-1569]. Q1: Is it possible to characterize those embedded graphs, without degree restrictions, that have a checkerboard colorable twisted dual? Q2: If G is a 4-regular embedded graph, which of its twisted duals are also 4-regular and checkerboard colorable? References: [1] Q. Yan, X. Jin, Checkerboard colourable twisted duals, arXiv:1808.04047 [math.CO] 14 pages, 15 figures. [2] X. Guo, X. Jin, Q. Yan, Characterization of regular checkerboard colourable twisted duals of ribbon graphs, J. Combin. Theory Ser. A 180 (2021), 105428, 22pp. (Received March 05, 2021)