Trivalent dihedrants and bi-dihedrants

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A Cayley (resp. bi-Cayley) graph on a dihedral group is called a *dihedrant* (resp. *bi-dihedrant*). In 2000, a classification of trivalent arc-transitive dihedrants was given by Marušič and Pisanski, and several years later, trivalent non-arc-transitive dihedrants of order $4p$ or $8p$ (p a prime) were classified by Feng et al. As a generalization of these results, our first result presents a classification of trivalent non-arc-transitive dihedrants. Using this, a complete classification of trivalent vertex-transitive non-Cayley bi-dihedrants is given. As a by-product, we generalize a theorem in [The Electronic Journal of Combinatorics 19 (2012) #P53].

This is joint work with Jin-Xin Zhou.