Selective 3-edge-colourings and cyclic edge-connectivity in cubic bipartite graphs

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The abstract is as follows:

It is well known that every cubic bipartite graph admits a proper colouring of its edges in three colours. The edges in a colour class of a 3-edge-colouring of a cubic bipartite graph G form a perfect matching in G. So, to find a 3-edge-colouring of G in which all the edges in a given set K have the same colour, we need to find a perfect matching in G which contains the set K. In this talk we consider restrictions on the cyclic connectivity of G and the distances between pairs of edges in K which will ensure that such perfect matchings exist.