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Penny Haxell*, C and O Dept, University of Waterloo, Waterloo, ON , Canada. *On characterising Vizing's edge colouring bound.*

We address the problem of characterising those multigraphs G for which equality holds in Vizing's classical edge colouring bound $\chi'(G) \leq \Delta + \mu$, where Δ denotes the maximum degree and μ denotes the maximum edge multiplicity of G . By the well-known theorem of Holyer, this should not be possible when $\mu = 1$ (unless P=NP). However, if the famous Seymour-Goldberg conjecture holds, then whenever $\mu \geq 2$ it should be true that G attains Vizing's bound if and only if there exists an odd subset $S \subseteq V(G)$ with $|S| \geq 3$, such that $|E[S]| > (|S| - 1)(\Delta + \mu - 1)/2$. We show that this characterisation does hold if μ is bounded below by a logarithmic function of Δ .

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