Circular chromatic number: a survey

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Abstract: The circular chromatic number \(\chi(c)(G)\) of a graph \(G\) (also known as 'the star-chromatic number'), is a natural generalization of the chromatic number of a graph. In this paper, we survey results on this topic, concentrating on the relations among the circular chromatic number, the chromatic number and some other parameters of a graph. Some of the results and or proofs presented here are new. The last section is devoted to open problems. We pose 28 open problems, and discuss partial results and give references (if any) for each of these problems.

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