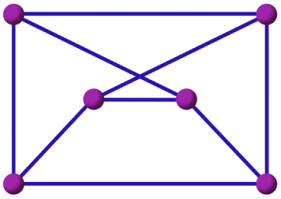

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ALGORITHMIC ASPECTS OF THE IRREGULAR CHROMATIC INDEX

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A graph G is locally irregular if adjacent vertices of G have distinct degrees. An edge colouring of G is locally irregular if each of its colours induces a locally irregular subgraph of G. The irregular chromatic index of G refers to the least number of colours used by a locally irregular edge colouring of G (if any). We show that determining whether the irregular chromatic index is equal to 2 is NP-complete in general. And we propose a linear-time algorithm for determining the irregular chromatic index of any tree.

Join work with Julien Bensmail and Eric Sopena.