

# Exploring Colour Constancy Solutions

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## Abstract

The aim of this paper is to explore the space of diagonal colour constancy solutions. In gamut mapping approaches, finding the illuminant of a scene implies to find the set of feasible maps and afterwards to apply certain decision criterion to select a proper solution. This last step has been usually based on a heuristic computation over the feasible set. However an analysis on how are the solutions of this feasible set is not known by the authors. This is the essential contribution of this paper, since we explore on a reduced version of the feasible set some specific properties of the solutions. Criteria such as, maximum volume, feasible set average, maximum area on chromaticity plane or grey world solutions have been explored, and this works conclude that this usual criteria do not always assure finding optimal solutions, and therefore, further work remains to be done in this sense. Finally, we outline that some criteria related to the position of the optimal mapped image on the chromaticity plane should be taken into account.