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Simone Naldi*, 123 Avenue Albert Thomas, Limoges, France, and **Rainer Sinn**,
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certificates and projective geometry.*

We revisit facial reduction from the point of view of projective geometry. This leads us to a homogenization strategy in conic programming that eliminates the phenomenon of weak infeasibility. For semidefinite programs (and others), this yields infeasibility certificates that can be checked in polynomial time. Furthermore, we propose a refined type of infeasibility, which we call stably infeasible, for which rational infeasibility certificates exist and that can be distinguished from other infeasibility types by our homogenization. (Received January 15, 2021)