Small Triangulations of $\mathbb{R}P^n$: Small values of n

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Abstract:
Very little is known about the problem of finding small (simplicial) triangulations of real projective spaces. The known constructions for large dimensions require exponentially many vertices whereas the best lower bounds only say that the number of vertices needed is quadratic in the dimension! In this talk, we present some constructions of small $\mathbb{R}P^n$. We note some interesting properties of these triangulations, and explore their connections to some classical questions in combinatorics, and see what light these questions may shed on our problem.