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Title: Hilbert Series and Stanley-Reisner rings

Authors: Kumar, Naveen (/jspui/browse?type=author&value=Kumar%2C+Naveen)

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Abstract: The main purpose of the thesis entitled 'Hilbert Series and Stanley-Reisner rings' is to understand Stanley-Reisner rings and its applications. We study Stanley-Reisner rings in order to solve combinatorial problems associated to simplicial complexes with the help of commutative algebra. The thesis also includes results from a paper of Eagon-Reiner which characterizes Stanley-Reisner rings  $k[\Delta]$  having linear resolutions in terms of Cohen-Macaulayness of Alexander dual  $\Delta^*$ . The paper of Eagon-Reiner also gives explicit computations of the Betti numbers of a Stanley-Reisner ring  $k[\Delta]$  under some mild conditions on  $\Delta$ .

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