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Andrew Putman and **Daniel Studenmund*** (dstudenm@nd.edu), 255 Hurley Hall,
Department of Mathematics, University of Notre Dame, Notre Dame, IN 46556. *Vanishing in
top-dimensional cohomology of $GL_n(\mathcal{O})$.*

Any arithmetic group Γ over the rational numbers has finite virtual cohomological dimension (vcd). One broad area of study is computing group cohomology of such Γ with rational coefficients in dimensions near the vcd. For a number field K , Church-Farb-Putman gave various conditions on the number ring \mathcal{O}_K that guarantee that rational cohomology of $SL_n(\mathcal{O}_K)$ vanishes or does not vanish in the vcd. In this talk, we build on their methods to give conditions on n and \mathcal{O}_K under which the rational cohomology of $GL_n(\mathcal{O}_K)$ vanishes in its vcd. We will explain how basic properties of the number ring affect vanishing of cohomology. Work discussed is joint with Andy Putman. (Received August 14, 2019)