PLURIGENERA AND INVARIANTS OF CANONICAL n–FOLDS

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ABSTRACT. The plurigenera of a canonical 3–fold (or $\mathbf{Q}$–Fano 3–fold) are now well understood by the results of [YPG], Chapter III. We even know how to treat the plurigenera as a whole as a rational Hilbert series with a simple denominator, and this series can be plugged in to computer algebra to generate lists of examples. At present we don't know too much about the geography of the data, with most of what we know coming from the Bogomolov–Miyaoka– Yau inequality. There are some difficulties in trying to extend these results to canonical 4–folds (or $\mathbf{Q}$–Fano 4–folds), but one can at least try. For a preview, see my MSRI video (linked from my front page).