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Jessica Delgado* (delgado3@hawaii.edu), University of Hawaii, Department of Mathematics,
2565 McCarthy Mall, Honolulu, HI 96822. *Higher-Dimensional Frobenius Gaps.*

This research expands on the well studied Frobenius problem and examines a related problem. We focused on very ample polytopes of dimension three and their gaps, lattice points in the homogenization of the polytope that cannot be written as integer combinations of lattice points in the polytope. The main result is a theorem which states a universal upper bound of the gaps of very ample polytopes in dimension three does not exist. We built a program to compute the gaps of any very ample polytope. The computations of explicit examples are used to prove the main result on the nonexistence of the upper bound as well as a conjecture on the behavior of the gaps. (Received August 15, 2013)