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Efficiency of multi-wave mixing in a sphere SUMAN DHAYAL,
YURI ROSTOVTSEV, University of North Texas — We consider nonlinear muti-
wave mixing in a sphere. We compare the efficiency of wave mixing in a sphere with
the efficiency in a bulk or in the slab where, as well-known, the phase-matching plays
an important role. We have found the optimal conditions for nonlinear generation
in a sphere. The obtained results can be applied to coherent Raman microscopy and
allow us to maximize the signal for arbitrary shpae of nanoparticles.

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