Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

The nuclear geometric Yang-Mills equation for incompressible nuclei NICHOLAS SPARKS, Tulane Univ, GEORGE ROSENSTEEL, Tulane University — The geometric Yang-Mills equation for the Bohr-Mottelson collective model provides a way of relating angular momentum degrees of freedom to the internal (Kelvin circulation) degrees of freedom. It is well known that nuclei are highly incompressible. The correct mathematical description for nuclear incompressibility involves an equation of constraint for constant volume. An alternative yet equivalent description involves treating this constraint in a purely differential geometric way. The relationship between these two seemingly different approaches is explored here.

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Date submitted: 01 Jul 2016 Electronic form version 1.4