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I-Love-Q to the extreme HECTOR O. SILVA, NICOLAS YUNES, Montana State University — Certain bulk properties of neutron stars, like their moment of inertia I, rotational quadrupole moment Q and tidal Love number, satisfy approximately universal (equation of state insensitive) relations. But how general are these I-Love-Q relations? Do they continue to hold even when using the most extreme equations of state? In this talk, I will show that these relations do continue to hold even when considering extreme equations of state, constrained only to satisfy a handful of generic, physically-sensible conditions. These results reinforce the robustness of the I-Love-Q relations against our current incomplete picture of physics at supranuclear densities, while strengthening our confidence in the applicability of these relations in neutron star astrophysics.

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