1019-57-203   **Hans U. Boden*** (`boden@mcmaster.ca`), Math & Stats, 1280 Main St. W., McMaster University, Hamilton, Ontario L8S 4K1, Canada. *The SU(3) Casson invariant and spliced sums.*

The SU(2) Casson invariant $\lambda_{SU(2)}$ is additive under connected sum and more generally under spliced sum. Although the SU(3) Casson invariant $\lambda_{SU(3)}$ is not additive under connected sum, additivity can be achieved by subtracting a suitable multiple of $\lambda_{SU(2)}^2$. It would be natural to expect this same linear combination of $\lambda_{SU(3)}$ and $\lambda_{SU(2)}^2$ to be additive for spliced sums, but simple examples show this is not the case. Computations related to this phenomenon lead to interesting questions about splitting the spectral flow of the twisted odd signature operator along manifolds split along a 2-torus. (Received August 15, 2006)