

1983a

“Efficient Algorithms for Spin-Axis Attitude Estimation,” M. D. Shuster, *The Journal of the Astronautical Sciences*, Vol. 31, No. 2, April–June 1983, pp. 237–249; Errata: Vol. 51, No. 1, January–March 2003, p. 121.

My purpose in this paper, the journal publication of 1981c, was to develop a vectorial approach to spin-axis attitude estimation in opposition to the spherical-angle approach popularized by my good friend of more than forty years, James R. Wertz, in several articles and particularly in *Spacecraft Attitude Determination and Control* (1978). (See 1978c above for publication details.) The publication suffers from the absence of a truly efficient method for finding the optimal solution for the spin-axis attitude, although the very efficient first-order approximation is generally adequate. Note the errata to 1983a, namely, 2003c.

A much more complete approach is presented in 2007b. This will appear as “Spin-Axis Attitude Estimation” by S. Tanygin and Malcolm D. Shuster, in *The Journal of the Astronautical Sciences*, Vol. 55, No. 1, January–March 2007. One important result of the new work is that the neglect of the spin-axis unit-norm constraint in the estimation process can cause unacceptable error levels in the estimate if the data is strongly correlated. This is in strong contrast to the glib statement in 1983a.

Some material in this work is not repeated in 2007b.

Succeeded by 2007b.