



EGUsphere, author comment AC2  
<https://doi.org/10.5194/egusphere-2022-293-AC2>, 2022  
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## **Reply on RC2**

Brady P. Strabel et al.

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Author comment on "Quad-Mag board for CubeSat applications" by Brady P. Strabel et al.,  
EGUsphere, <https://doi.org/10.5194/egusphere-2022-293-AC2>, 2022

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Thank you for taking the time to review and comment on this manuscript. Please find our replies to the comments:

Chapter2: As outlined by Luezinger and Taylor (2010), the described circuit acts as a comparator-based L/R relaxation oscillator that alternates positive and negative current through the non-grounded side of the sensing coil. Indeed, the reverse and forward biasing is done via electronic switches in the RM3100 control ASIC that effectively change the polarity of the coil. Measurements are taken in both directions and compared to generate a zero-centered, positive/negative field value.

Chapter 4.2: An interference section has been added to address related concerns. In short, the offsets present are in fact a combination of board electronics and mutual sensors present on the board.

Chapter 4.4: Added a paragraph to the Stability section reacknowledging this.

Introduction P1L15: Added an additional reference to the SWARM mission in following paragraph covering recent multi-spacecraft missions.

P9L23: Changed to "stack"

Abstract: Changed to "The Quad-Mag enables nearly 1 nT magnetic field measurements at 1 Hz using commercial-off-the-shelf sensors for space applications under optimal conditions.