Impact statement

(1) Satellite data and field data are often not collected at the same time, resulting in a source of error in ocean color algorithm development that is frequently cited in the literature, but is poorly constrained. (2) In this study, we will model particle movement under a range of wind speed and direction conditions and compare the results to the pixel size of Planet, Sentinel 2, and Sentinel 3 imagery. (3) The results of this simulation will clarify a source of disconnect between field and algorithm-derived measurements of water quality, improving developer communication and stakeholder interpretation. This will better inform water quality management decisions that impact environmental well-being, and, consequently, human health and economic stability (4) These results will be useful to anyone using field data to develop and model ocean color remote sensing algorithms and to anyone interpreting those algorithm outputs. These could be academics, local, state, and federal governmental researchers and policy makers, industry professionals, and the general public. Therefore, the implications of this study are far-reaching, highly impactful, and have long-term relevance.