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Effects of Photobleaching on Microplastics
SALVATORE FERRONE[1], KELLEY SULLIVAN[2], Ithaca College — The presence of microplastics in our oceans and lakes is a contemporary environmental issue. A popular method for studying microplastics is fluorescence microscopy. We are studying the effects of fluorescence photo-bleaching on the imaging of microplastics. Our goal is to find out to what extent microplastics photo-bleach and if the photo-bleaching is recoverable. Photo-bleaching may entirely destroy the plastics ability to fluoresce, hamper it for a short time, or have a minuscule effects. For this project, we consider the seven recyclable plastics. For each plastic type, we record a video of the micro-plastics for several hours under 405 nm light, then analyze and plot the image intensity as a function of time to see if the outputted light from the plastic decays over time. We then take single images at different time intervals to check if the intensity recovers. Our results will help set conditions under which fluorescence techniques can be used on microplastics.

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