

Dataset of the predator-prey interaction between the dinoflagellate *Dinophysis acuminata* and the ciliate *Mesodinium rubrum* (395 GB total data size):

- (1) High-speed, high-magnification videos of the swimming behavior of the dinoflagellate *Dinophysis acuminata* in the absence of the ciliate *Mesodinium rubrum*: 138 cases
- (2) High-speed, high-magnification videos of the motion behavior of the ciliate *Mesodinium rubrum* in the absence of the dinoflagellate *Dinophysis acuminata*: 96 cases
- (3) High-speed, high-magnification videos of the predator-prey interaction between the dinoflagellate *Dinophysis acuminata* and the ciliate *Mesodinium rubrum*: 201 cases

Dataset of the swimming behavior of the dinoflagellate *Alexandrium fundyense* (597 GB total data size):

- (1) High-speed, high-magnification videos of the swimming behavior of the dinoflagellate *Alexandrium fundyense*, Strain 38-3: 115 cases
- (2) High-speed, high-magnification videos of the swimming behavior of the dinoflagellate *Alexandrium fundyense*, Strain GTM253: 36 cases
- (3) High-speed, high-magnification videos of the swimming behavior of the dinoflagellate *Alexandrium fundyense*, Strain ATMP7-E8: 442 cases
- (4) High-speed, high-magnification videos of the swimming behavior of the dinoflagellate *Alexandrium fundyense*, Strain ATSP7-D2: 256 cases
- (5) High-speed, high-magnification videos of the swimming behavior of the dinoflagellate *Alexandrium fundyense*, cells wildly caught from Salt Pond: 41 cases

Dataset of the dinoflagellate *Heterocapsa triquetra* (67 GB total data size):

- (1) High-speed, high-magnification videos of the swimming behavior of the dinoflagellate *Heterocapsa triquetra* (a lab strain): 80 cases
- (2) High-speed, high-magnification videos of the swimming behavior of the dinoflagellate *Heterocapsa triquetra* (cells wildly caught from Salt Pond): 37 cases

Dataset of the dinoflagellate *Scrippsiella acuminata* (64 GB total data size):

High-speed, high-magnification videos of the swimming behavior of the dinoflagellate *Scrippsiella acuminata* (a lab strain): 91 cases