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| **No** | **Module** | **No** | **Parameter** | |
| 1 | Settings | 1 | Simulation mode (0: rapid prototype, 1: parameter auto-tuning, 2: batch processing) |
| 2 | Number of agents |
| 3 | Simulation time |
| 4 | Sample time of motion |
| 5 | Sample time of upper control |
| 6 | Sample time of bottom control |
| 7 | Flag to control whether to save data |
| 8 | Time interval for storing agents’ states |
| 9 | Flag to select motion type |
| 10 | Flag to select swarm algorithm |
| 11 | Flag to select set of performance metrics |
| 12 | Flag to control whether to plot figures |
| 13 | Time interval for updating figures | |
| 2 | Map | 1 | Flag to control whether to regard the specified range as walls | |
| 2-3 | X range | |
| 4-5 | Y range | |
| 6-7 | Z range | |
| 8 | Radius of cylinders | |
| 9 | Row number of cylinders | |
| 10 | Col number of cylinders | |
| 11 | Space between adjacent cylinders in x direction | |
| 12 | Space between adjacent cylinders in y direction | |
| 13 | Offset of cylinders in x direction | |
| 14 | Offset of cylinders in y direction | |
| 15 | Number of walls that a cylinder is dispersed into | |
| 16 | Resolution of grid map in x direction | |
| 17 | Resolution of grid map in y direction | |
| 3 | Motion  (, point-mass) | 1 | Maximum acceleration | |
| 2 | Maximum velocity | |
| 3 | Time constant for desired position convergence | |
| 4 | Time constant for desired velocity convergence | |
| Motion  (, quadcopter) | 1 | Gravity constant | |
| 2-4 | Inertia | |
| 5 | Mass | |
| 6 | Length from center to motor | |
| 7 | Maximum horizontal speed | |
| 8 | Maximum vertical speed | |
| 9 | Maximum yaw rate | |
| 10 | Maximum vertical acceleration | |
| … | … | |
| Motion  (, quadcopter) | 1 | Maximum speed | |
| 2 | Maximum rotation speed | |
| 3 | Time constant for desired position convergence | |
| 4 | Noise | 1 | Standard deviation of velocity noise | |
| 5 | Sensor | \ | Sensor type (Currently only LASER) | |
| 1-2 | Detection angular range | |
| 3 | Angular resolution | |
| 6-7 | Detection distance range | |
| 6 | Swarm  (, Vasarhelyi) | 1 | Communication range | |
| 2 | Flock speed | |
| 3 | Repulsion range | |
| 4 | Repulsion gain | |
| 5 | Stopping point offset of alignment | |
| 6 | Coefficient of velocity alignment | |
| 7 | Velocity slack of alignment | |
| 8 | Gain of braking curve | |
| 9 | Acceleration of braking curve | |
| 10 | Stopping point offset of walls | |
| 11 | Velocity of virtual shill agents | |
| 12 | Gain of braking curve for walls | |
| 13 | Acceleration of braking curve for walls | |
| 14 | Maximum of desired speed | |
| Swarm  (, Vasarhelyi+will) | 1-2 | The same as the No.1-2 parameters above | |
| 3 | Time constant of exponential decay of will | |
| 4-15 | The same as the No.3-14 parameters above | |
| Swarm  (, Couzin) | 1 | Half field of view | |
| 2 | Dimension | |
| 3 | Flock speed | |
| 4 | Repulsion radius | |
| 5 | Width of orientation range | |
| 6 | Width of attraction range | |
| 7 | Angular noise of desired velocity | |
| 7 | Evaluation  () | 1 | Flock speed | |
| 2 | Collision radius | |
| 3-5 | Parameters of fitness functions | |
| Evaluation  () |  |  | |
| 8 | Visualization | 1 | Flag to control whether to plot trajectories | |
| 2 | Flag to control whether the perspective follows the group center | |
| 3 | Flag to control whether to save figures | |
| 4 | Flag to control whether to save video | |
| 5 | Plot dimension | |
| 6 | Time interval of trajectories | |
| 7 | Video speed | |