

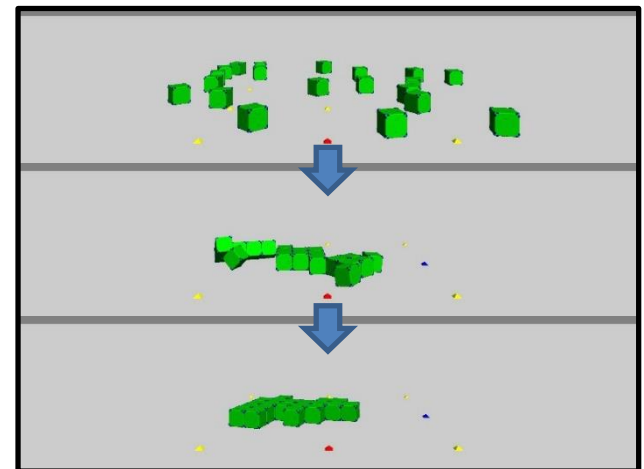
Formation of planar structures with rollable and jumpable cubic modular robots

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- **[Purpose]** To verify the effectiveness of the proposed control algorithm of a new modular robot for the construction of a planar structure.
- **[Outline]** Simulation was conducted to study the interaction between robots on cases with different number of robots and initial position. Since each robot is equipped with magnets for coupling with the other robots so as to form closely-packed structures, large-scaled computer system OCTOPUS is used to handle the massive computation requirement on torque and force between numerous magnets.
- **[Result]** The effectiveness of the proposed algorithm in the construction of a planar structure under micro gravity environment is verified

Computing system: OCTOPUS

CPU node	483.24 node-hour
Xeon Phi node	32.8 node-hour
parallelize	1 node
Octopus points	26.0



Simulation result