Acceleration of ice aggregates by electrostatic field

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We newly developed the experimental method to deal with the icy dust in the laboratory in order to use it for the study of the aggregation process of icy planetesimals. Because of the high dielectric constant of ice, it is able to response to electric field even if the particle size is enough large (micrometer). We used the high electric field to control the icy dusts and succeeded to form ice aggregates which size was about mm. This aggregate was accelerated by the same electric field and flew out. The velocity of the accelerated aggregates depends on the electric field, which was from 10 cm/s to 1 m/s under the electric field from 20 V/mm to 200 V/mm.