

Abstract Submitted  
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**Large-eddy simulation of turbulent flow within a regular array of cubes**<sup>1</sup> TAKENOBU MICHIOKA, RYO FUNAKI, TAKUMI KAWAI, Kindai University — Large-eddy simulation is implemented for turbulent flow within a regular array of cubes. The square cubes are arranged regularly on the bottom surface at equal intervals, and are normal to the flow. The cube array consists of twelve rows aligned in the streamwise direction. The approaching flow is uniform laminar flow to exclude the effect of inflow turbulence on the turbulent flow within the regular array. At the first row, the turbulent flow is generated by cubes, but large-scale turbulent flow is not observed. At the second row, the values of the energy spectra of the fluctuation in the velocity at low frequency becomes larger near the bottom surface, and large-scale turbulent flow is generated near the bottom surface. After the second row, the peak of the energy spectra shifts towards low frequency, and the size of the large-scale turbulent flow becomes larger as the fetch increases. After the seventh row, the turbulent flows eventually pass between the cubes at a regular interval, and the large-scale turbulent motions also affects the turbulent flow over the cubes.

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