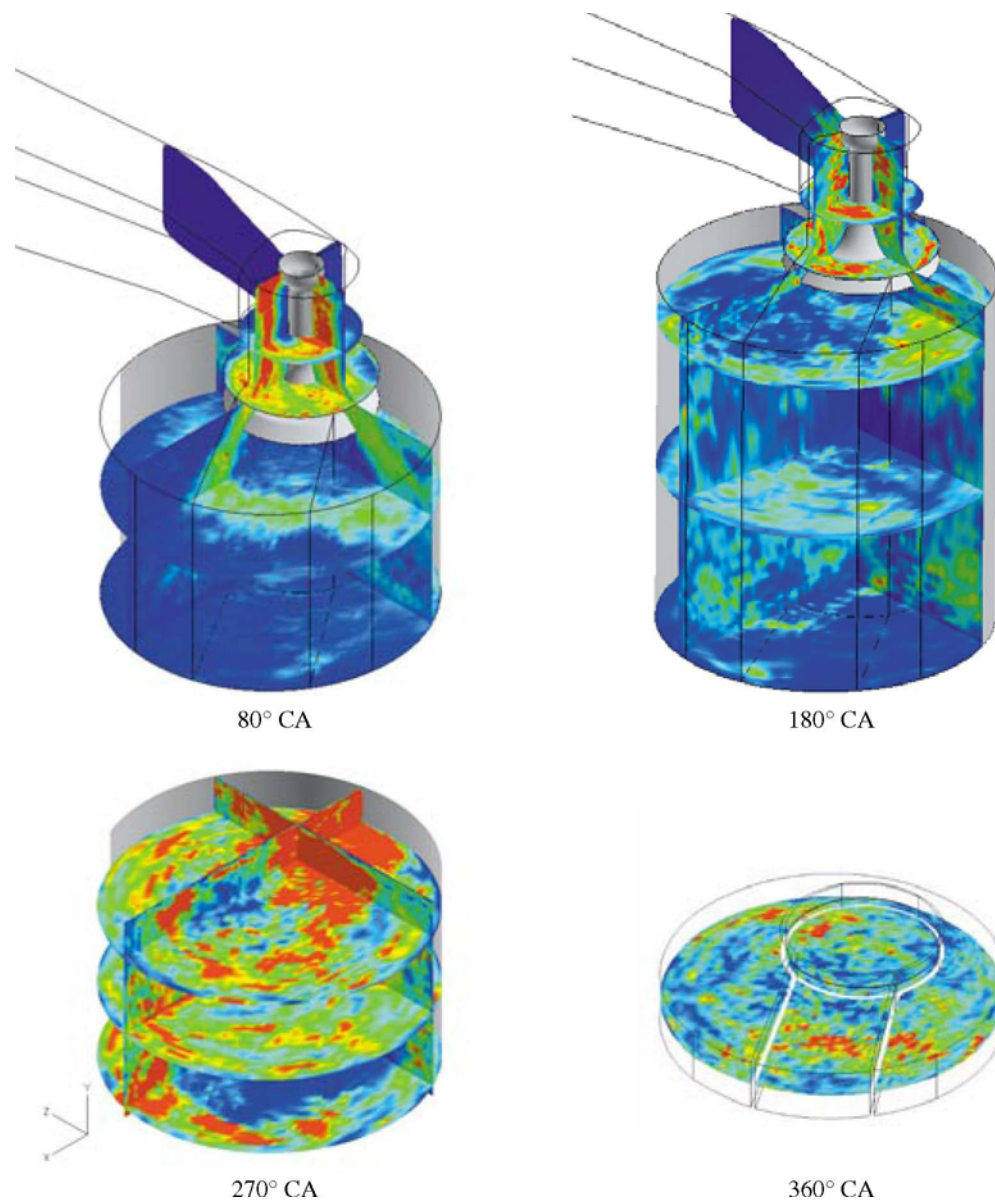## 5. Large Eddy Simulation of Engine In-Cylinder Flow

Zhang, H. L.[1], Kobayashi, T. [2] and Taniguchi, N.[1]

1) *Institute of Industrial Science, University of Tokyo 7-22-1 Roppongi Minato-ku, Tokyo 106-8558, Japan*
2) *Center for Collaborative Research, University of Tokyo, 7-22-1 Roppongi Minato-ku, Tokyo 106-8558, Japan*

80° CA

180° CA

270° CA

360° CA

These figures show the numerical results of turbulence intensity in cylinder with large eddy simulation method. Engine speed is set on 300rpm. Reynolds number varies from 2100 to $1.4° \times 10^4$ in engine working process. Induction and compression strokes are calculated from 0 to 360 Crankshaft Angle with time interval of 1/200° CA. Four figures show the results of 80, 180, 270 and 360° CA. Very strong turbulence intensity is introduced in induction process and weakened in compression process. On the top dead center of piston, the turbulence is only left at very low level. However, the swirl movement (swirl number) is maintained at high level (not shown here).