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Some Additional CFD Flow Field Solutions Showing the Effect of Teardrop Shaped Dimple Design on the Golf Ball Aerodynamic Performance

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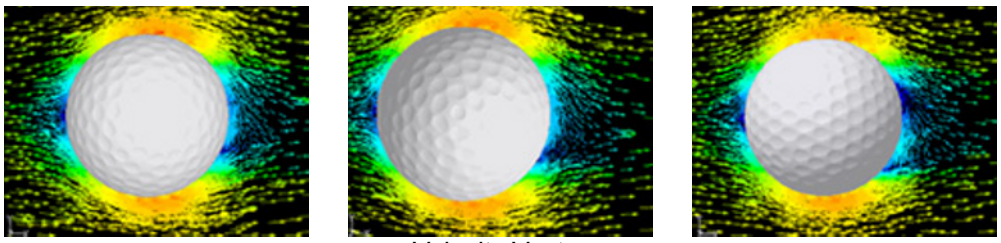

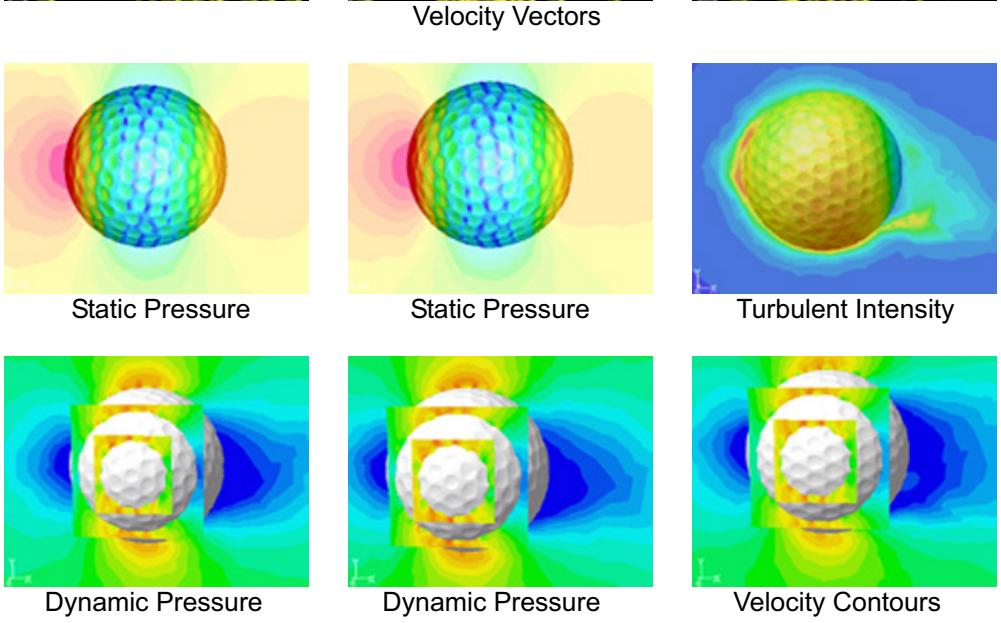

These figures show and compare some additional CFD flow field solution results for a golf ball having 292 identical teardrop shaped dimples, plus two circular ones located at the north and south poles of the ball[1, 2)]. The longitudinally oriented teardrop dimples are arranged in a layered manner with their tail to head major axes all parallel to the equator. The flow field Reynolds number is 1.3 x 10^5. The backspin rate is 4,000 rpm, and the ball rotations include backspins matching with dimple group directional patterns of dimple tails lead, dimple heads lead, and a cross-hatched type of lined dimple rows. Flow behavior indeed changes depending on the changes of the dimple directional distribution pattern as the figures show. Significant improvement using teardrop shaped dimples reducing the ball air drag was not seen in this CFD analysis.

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1) L. L. Ting, "Effect of Teardrop Shaped Dimple Design on the Golf Ball Aerodynamic Performance", *The Engineering of Sport 5,* Volume 1, (Ed. by M. Hubbard, R. D. Mehta and J. M. Pallis), *ISEA,* (2004), pp.43-48.

2) L. L. Ting, "Some Additional CFD Flow Field and Pressure Solution Results for Dimpled Golf Ball with Backspin Rate of 2,000 rpm", Journal of Visualization, Vol. 6, No. 4 (2003) 326.