3rd International Conference on Future Technologies in Manufacturing, Automation, Design & Energy

DECEMBER 14-16, 2022

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NATIONAL INSTITUTE OF TECHNOLOGY PUDUCHERRY, KARAIKAL, INDIA

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Cricket is the one of the most popular sport in the world with more than 2.5 billion fan-bases. The aerodynamic properties of a cricket ball are such an interesting thing that cricket players and spectators are ever curious about it for many years. While moving towards or away from the batsman, the lateral movement of cricket ball in air has been a matter of wonder since years. The phenomenon called 'swing' is sometimes surprising even to the bowlers. To understand the aerodynamic behavior, forces acting on a cricket ball are needed to be understood. Flow visualization techniques and measurements of different flow parameters are needed to introspect on this. This paper aims to report all the related studies in this field. Several experimental and numerical studies have depicted the cause of swing as geometrical non-isotropy of a cricket ball created by the stitches called seam. Seam angle at the time of projection plays a vital role in boundary-layer separation during the flight trajectory. This paper explains both conventional and reverse swing. Role of humidity, age of the ball, seam angle, surface roughness, and speed has been described with reference to the papers.

Keywords: ***Boundary-layer separation; Cricket ball; Swing bowling; Flow visualization; Fluid dynamics***