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The FLOW AROUND BYPASS CROSSOVER SUB IN FRACTURING PROCESS OF HORIZONTAL WELLS LDA EXPERIMENT

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The complex vortex flow around Bypass Crossover Sub in the fracturing process of horizontal wells, at different Reynolds num, is investigated by the Laser Doppler Anemometry (LDA) experiment. The velocity field have been measured by means of a LDA system, the main point of investigation in the flow under consideration is the axial velocity. The experimental observations have shown that mean axial velocity at the slots on Bypass Crossover Sub exist positive and negative values, backflow not only exist in annulus nearly wall., backflow position and backflow rate of each profile are increasing different with an increase of Reynolds number. When the Reynolds number increases to a value, the influence of gravity to flow field is very small. All of these not only will provide some reference on structural design and optimization, it also helps us better understand the turbulent flow mechanisms of a complex structure.

Keywords: LDA;Bypass Crossover Sub;fracturing;turbulent;complex vortex;

Preferred Presentation Type: lecture