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**Interacting Hairpin Vortices**[1] RIJAN MAHARJAN, DANIEL SABATINO, Lafayette College — The generation mechanism for hairpin vortices is most commonly described as an autogeneration process in which an isolated vortex induces the formation of additional vortices. However, the interaction of two or more vortices can be another generation mechanism. The present work examines the interaction of two artificially generated hairpin vortices in a free-surface water channel. The hairpins are formed by direct injection at different streamwise locations. The different modes of interaction are categorized by the strength and relative position of the vortices at the time of interaction. One of the interaction modes causes the generation of a third hairpin vortex in a process similar to the autogeneration process of isolated hairpins. A comparison of the isolated and interacting generation processes is presented using visualizations and PIV measurements.

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