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## Flow structures in dividing open channels: A review (Conference Paper)

(Open Access)

Ibrahim, I.<sup>a</sup> ✉, Legori Ibrahim, S.<sup>a</sup>, Khan, S.<sup>b</sup>

<sup>a</sup>Department of Civil Engineering, International Islamic University Malaysia, Gombak, Selangor, 53100, Malaysia

<sup>b</sup>Department of Electrical and Computer Engineering, International Islamic University Malaysia, Gombak, Selangor, 53100, Malaysia

### Abstract

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The supply of water for human consumption starts with the abstraction of 'raw' water from various sources. Most of these facilities convey raw water by pumping it directly from rivers via lateral channels to nearby water treatment plants, but this is badly affected by debris and sediment clogging at the intake structures. Lateral intakes are actually special cases of river bifurcations, where the channel naturally divides into two different branches, each carrying part of the flow and sediment. Many researchers have completed studies on bifurcations/diversions to understand the behaviour of water flow and sediment transport. However, a complete understanding of the phenomenon, especially in relation to secondary flows and vortices, is lacking up to this day. In fact, if this can be overcome, it will greatly contribute to the fundamental study of hydrodynamics at asymmetric fluvial bifurcations as well as in optimal design of diversions. Thus, the distribution of water flow in both main and lateral channels requires further detailed investigation. A review of the current state of research is discussed in this paper, with the objective of identifying the grey areas and gaps specifically in the investigation of complex turbulent behaviour of flow structures in open channels with lateral diversions. © Published under licence by IOP Publishing Ltd.

### SciVal Topic Prominence ⓘ

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### Indexed keywords

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