Distribution functions of momentum and flow resistance for 1-D unsteady flow in rivers

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SUMMARY

The reduction of a complex channel flow to one dominant direction, i.e. to one dimensional model, is connected with a great number of difficulties and assumptions. The flow through compound cross section generally occurs in the main channel and in the shallow flood plains. Between those parts there is momentum transfer which should be introduced into the equations of one dimensional unsteady flow. The flow resistance is dealt with in a similar way. Both effects are efficiently described by distributions for the momentum f1(h) and flow resistance f2(h). Those functions have practical importance in the phase of selecting the representative cross sections which can well describe the channel properties. The example of the unsteady flow in the Sava River illustrates the functions application.