# 寒冷地区河流水动力数值模拟

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摘　要：本文根据位于我国寒冷地区的第二松花江冬季不完全结冰的特点，在明水期水动力模型的基础上建立了适合于第二松花江干流明水期及冰封期的水动力模型。以水温为判定条件，水温＞0.1℃的河段按明流模型计算，水温≤0.1℃的河段按封冻模型计算，结合冰封期水位测量的特点，对水位模拟结果进行了修正，利用06、07年水文监测数据对模型进行了率定和验证，计算结果表明，建立的第二松花江明水期及冰封期的水动力模型能够很好的适用于该地区。

关键词：寒冷地区；水动力模型；明水期；冰封期

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**Abstract:** Based on the characteristics of the Second Songhua River in cold region which is not completely frozen, the hydrodynamics model which was suited for the free flow period and freezing period of the Second Songhua River mainstream was build on the basis of the hydrodynamics model of free flow period. Take the water temperature as a standard, free flow model was used when the reaches temperature was higher than 0.1℃, and the freeze-up model was used when the reaches temperature was equal or lower than 0.1℃. According to the characteristics of water level measurement in freeze modeled, the results of water level simulation were revised. The model was calibrated and verified by using the hydrological monitoring data of 2006 and 2007. All the results showed that the model was suited for this region.

**Keywords:** cold region, hydrodynamics model, free flow period, freezing period

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