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**Abstract:** Alternative testing machines used for centrifuge studies in civil engineering are described; specifically, the basket machine at the Laboratoire Central des Ponts et Chaussées, in Nantes, Paris, and the drum centrifuge at Cambridge University. Centrifuges offer a considerable advantage in that the gravitational stresses are correct even though the feature under study is at model scale. It is suggested that a model spray ice island could be built and that resulting studies would be most valuable. Problems related to the centrifuge's inability to speed up deformation rates are reviewed and various options are discussed.

Short-term ice behaviour studies involving the strength of ice rather than the longer term deformation properties of this time-dependent material are considered to be more suitable to centrifuge studies. Examples are described and advantages reviewed. Few centrifuges are equipped for cold work; the reasons for this are discussed and solutions are suggested. Opportunities for future ice centrifuge research are reviewed.

### "The Behaviour of Frozen Soils"

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