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Idealized simulations of katabatic flows in Iceland

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The generation and development of katabatic flows and land-breeze in Iceland are explored by idealized simulations. The atmosphere starts at rest and cools much faster over the land than over the surrounding ocean. Katabatic winds develop and at some locations they extend many kilometres away from the coast. The simulations reveal channelling and substantial acceleration of the flows in mountain gaps. Aloft, there is return flow and cyclonic circulation.