Ice Flows: A Game-based Learning approach to Science Communication

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Game-based learning allows people to become immersed in an environment, and learn how the system functions and responds to change through playing a game. Science and gaming share a similar characteristic: they both involve learning and understanding the rules of the environment you are in, in order to achieve your objective.

I will share experiences of developing and using the educational game "Ice Flows" for science communication. The game tasks the player with getting a penguin to its destination, through controlling the size of the ice sheet via ocean temperature and snowfall. Therefore, the game aims to educate the user about the environmental controls on the behaviour of the ice sheet, whilst they are enjoying playing a game with penguins.

The game was funded by a NERC Large Grant entitled "Ice shelves in a warming world: Filchner Ice Shelf system, Antarctica", so uses data from the Weddell Sea sector of the West Antarctic Ice Sheet to generate unique levels. The game will be easily expandable to other regions of Antarctica and beyond, with the ultimate aim of giving a full understanding to the user of different ice flow regimes across the planet.