

## IceCube Polar Science Workshop



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## Hot water drilling for the IceCube Upgrade and IceCube Gen2

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The IceCube Enhanced Hot Water Drill (EHWD) is being refurbished and put back in service to drill holes for the a 7 hole IceCube Upgrade. A preliminary redesign of that system using microturbines, low pressure water heating, high pressure pumping of hot water, and larger sleds is underway to prepare for a potential GEN2 drilling program with 120 holes. Special attention to changes in the architecture of the hot water drill to take advantage of the existing Mobil Heating Plants (MHPs) efficiency, increase the drill radius, increase drill speed, and improve operational flexibility. The Independent Firm Drill (IFD) that uses recirculating polypropylene glycol in copper tubes has been refurbished for use ahead of hot water drilling. The ARA hot water drill that is capable of making dry hole to 200 meters will be retasked to drilling and maintaining a rod well to supply make up water for drill operations. A brief description of each of these drill will be given. There will be a discussion of the general capabilities of the drills and the intended use in the near future.

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