Of antipodes and involutions

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Let H be a graded, connected Hopf algebra. Then Takeuchi's formula gives an expression for the antipode of H. But this alternating sum usually has lots of cancellation. We will describe a method using sign-reversing involutions to obtain cancellation-free formulas for various H. This technique displays remarkable similarities across the Hopf algebras to which it has been applied. No background about Hopf algebras will be assumed.

Joint work with Carolina Benedetti (Fields Institute, Canada).