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Discovery of a Dynamic Atmosphere at Enceladus from Cassini Magnetometer Observations

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Cassini magnetometer observations from three targeted flybys of Saturn's icy moon Enceladus revealed the existence of a dynamic atmosphere. This unexpected detection was originally made on a distant flyby and was subsequently confirmed on two followon flybys one of which was very close, at a distance of 173km from the surface of the moon. The magnetic field observations from all three flybys will be described as well as their interpretation. The magnetometer data from the second and third flybys are consistent with local outgassing activity via a plume from the surface of the moon near its south pole, as confirmed by other Cassini instruments.