

1. Record Nr.	UNINA9910151848403321
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Titolo	The Near-Saturn Magnetic Field Environment [[electronic resource] /] / by Ali Haidar Sulaiman
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
ISBN	3-319-49292-6
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (XXV, 97 p. 47 illus., 22 illus. in color.)
Collana	Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190- 5053
Disciplina	520 500.5
Soggetti	Space sciences Solar system Planetary science Astrophysics Space Sciences (including Extraterrestrial Physics, Space Exploration and Astronautics) Solar and Heliospheric Physics Planetary Sciences Astrophysics and Astroparticles
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"Doctoral thesis accepted by Imperial College London, UK."
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction to Space Plasmas -- The Sun-Saturn Connection -- Spacecraft and Instrumentation -- Magnetic Field Characterisation of Saturn's Bow Shock -- Quasi-perpendicular High Mach Number Collisionless Shocks -- The Magnetic Structure of Saturn's Magnetosheath -- Summary and Perspective -- Bibliography.
Sommario/riassunto	This thesis focuses on the very high Mach number shock wave that is located sunward of Saturn's strong magnetic field in the continuous high-speed flow of charged particles from the Sun (the solar wind). The author exploits the fact that the Cassini spacecraft is the only orbiter in a unique parameter regime, far different from the more familiar near- Earth space, to provide in-situ insights into the unreachable exotic regime of supernova remnants. This thesis bridges the gap between

shock physics in the Solar System and the physics of ultra-high Mach number shocks around the remnants of supernova explosions, since to date research into the latter has been restricted to theory, remote observations, and simulations.
