

1. Record Nr.	UNINA9910483648103321
Titolo	Timing neutron stars : pulsations, oscillations and explosions / / Tomaso M. Belloni, Mariano Méndez, Chengmin Zhang, editors
Pubbl/distr/stampa	Berlin, Germany : , : Springer, , [2021] ©2021
ISBN	3-662-62110-X
Edizione	[1st ed. 2021.]
Descrizione fisica	1 online resource (XII, 335 p. 92 illus., 58 illus. in color.)
Collana	Astrophysics and space science library ; ; Volume 461
Disciplina	523.8874
Soggetti	Neutron stars
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	1. Astrophysical Constraints on Dense Matter in Neutron Stars -- 2. General Relativity Measurements from Pulsars -- 3. Magnetars: A Short Review and Some Sparse Considerations -- 4. Accreting Millisecond X-ray Pulsars -- 5. Thermonuclear X-ray Bursts -- 6. High-Frequency Variability in Neutron-Star Low-Mass X-ray Binaries.
Sommario/riassunto	Neutron stars, whether isolated or in a binary system, display a varied and complex phenomenology, often accompanied by extreme variability of many time scales, which takes the form of pulsations due to the object rotation, quasi-periodicities associated to accretion of matter, and explosions due to matter accreted on the surface or to starquakes of highly magnetized objects. This book gives an overview of the current observational and theoretical standpoint in the research on the physics under the extreme conditions that neutron stars naturally provide. The six chapters explore three physical regions of a neutron star: the space around it, where accretion and pulsar companions allow testing of general relativity its surface, where millisecond pulsation and X-ray bursts provide clues about general relativistic effects and the equation of state of neutron matter its interior, of course, inaccessible to direct observations, can nevertheless, be probed with all observational parameters related to neutron star variability.