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Mid-frequency Gravitational Waves (0.1-10 Hz): Overview of Sources and Detection Methods

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The mid-frequency GW (Gravitational Wave) band (0.1-10 Hz) between the LIGO-Virgo-KAGRA detection band and LISA-TAIJI/TIANQIN detection band is rich in GW sources. In addition to the intermediate BH (Black Hole) Binary coalescence, GWs can also come from the inspiral phase of stellar-mass coalescence and from compact binaries falling into intermediate BHs. Detecting mid-frequency GWs enables us to study the compact object population, to test general relativity and beyond-the Standard-Model theories, to explore the stochastic GW background, to give early alert for GW observations of these sources at high frequency band and for electromagnetic searches for their counterpart, and so on. Great advances in both scientific goals and detection methods have accumulated since MG16. We here give an overview for this parallel session.

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