## Sixteenth Marcel Grossmann Meeting



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## Review of Tokamak Physics and GW conditions in relic conditions before 10<sup>^</sup>- 26 reduction in frequency with predictions as to what may be obtained in eLISA GW measurements from 10<sup>^</sup>-4 Hz down to 10<sup>^</sup>-16 Hz for eLISA

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• We consider an inverse procedure as to predict what may be obtained in eLISA , near Earth Orbit, in GW frequency. Among other issues would be the duration of the GW pulse so observed, in eLISA measurements, the relative degree of noise in the signal, as observed by eLISA, and this by the device of a step down in frequency of GW from about 10^19 Hz, in the early universe, or at a minimum 10^10 Hz down to 10^-4 Hz to a low of 10^-16 Hz, as could be ascertained by eLISA. We use the Tokamak in order to obtain GW signals an average of 10^25 to 10^26 times larger than what eLISA would observe as a way to make guesses as to the turbulence of the LISA signal, how to consider and prepare for inevitable isotropic stochastic noise in the signal as well as guesses as to sources as to the noise and the duration of the signal. Which may be observed by eLISA. We do this as was mentioned before using Grischuk and Sachin (1975) amplitude for the GW generation due to plasma in a toroid, we generalize this result for Tokamak physics. We obtain evidence for strain values up to h ~ 10^-25 - 10^-26 in a Tokamak center. The GW frequency created by a Tokamak are due to Plasma physics interactions within the Tokamak Toroid, but can with an application of common sense allow us to know what to look for in e LISA in its commissioning and GW runs

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