

Data Analysis of Gravitational Waves from the SASI mode in a Core Collapse Supernova with Hilbert-Huang Transform

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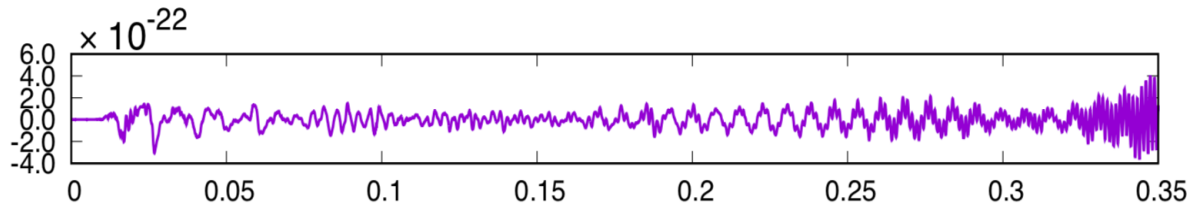
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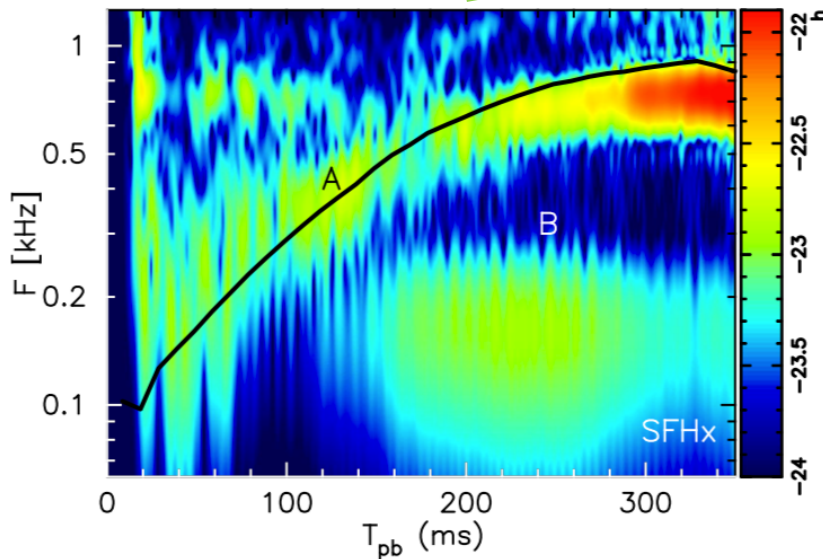
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- We analyzed a simulated GW signal from a core collapse supernova which contains the strong standing accretion shock instability (SASI) mode with the Hilbert-Huang Transform (HHT)

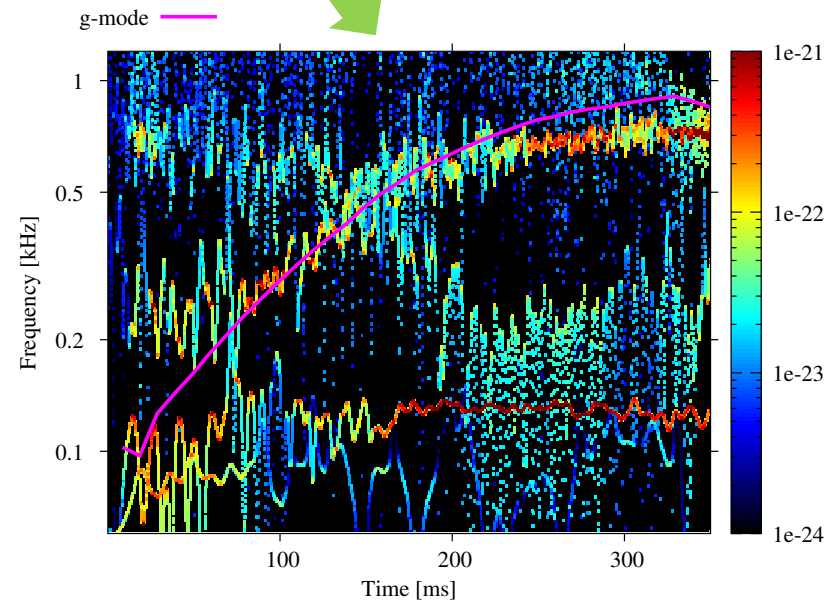


Short Time Fourier Transform



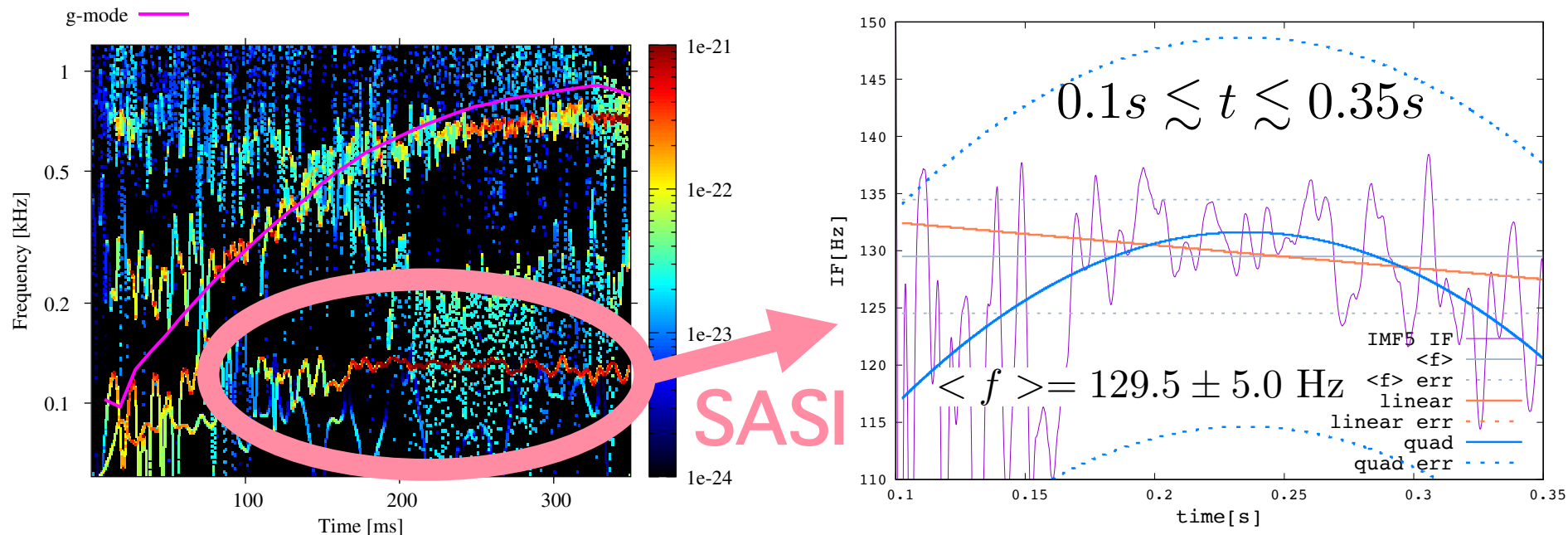
the basis is set in advance

Hilbert-Huang Transform



the basis is **NOT** set in advance

- The frequency of the SASI has information on the internal situation of the star before the explosion.
- To check the behavior of the SASI frequency of the simulated signal, we used weighted least-squares fitting of frequency.



- The fitting result suggests that the SASI frequency has a structure that varies over time.
We are planning to conduct more statistical evaluation.