

CHAPTER OVERVIEW

15: Relativistic Forces and Waves

As we've previously discussed in Chapter 14, you can analyze all types of collisions in special relativity without ever making a reference to the forces they exert on each other. In fact, we haven't talked about force at all so far, and there's a good reason for that: forces, already frequently less practical than energies in classical mechanics, become veritable nightmares in special relativity. Nonetheless, there are some questions you can only answer with reference to forces - for example, what velocity a particle will get if you exert a certain force on it for a given period of time.

[15.1: The Force Four-Vector](#)

[15.2: The Four-Acceleration](#)

[15.3: Relativistic Waves](#)

[15.E: Relativistic Forces and Waves \(Exercises\)](#)

Thumbnail: Two-dimensional representation of gravitational waves generated by two neutron stars orbiting each other. (Public Domain; NASA).

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