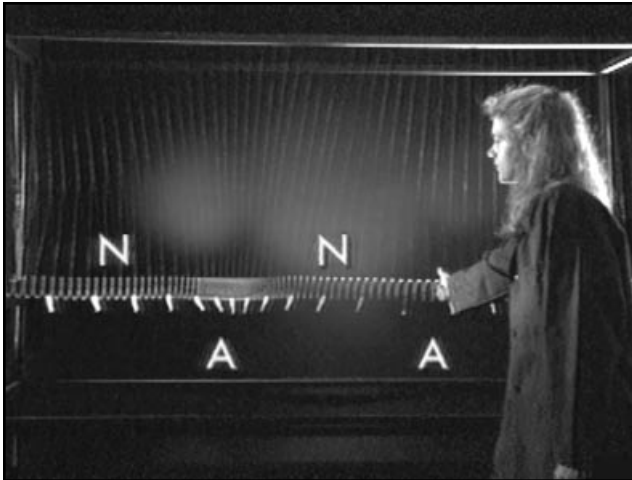


The suspended Slinky spring shown in Demonstration #15 on this disc can be used to illustrate standing waves. If the end of the spring is oscillated at the resonant frequency of one of the standing wave modes of the Slinky, a standing wave will be created, as shown in *Figure 1*. Pressure nodes and antinodes are marked on the standing wave. The pressure nodes shown are displacement antinodes, and the pressure antinodes are displacement nodes.



*Figure 1*

If we push and pull the end of this hanging spring repeatedly, waves of both compression and expansion travel along the spring.

If we push and pull at a certain frequency, a longitudinal standing wave appears on the spring.

Pushing and pulling at a higher frequency creates a standing wave with a shorter wavelength.

The nodes and antinodes of the standing waves have been marked in these slow-motion views.

### ***Equipment***

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Same as Demonstration 09-15.