Abstract:

The following paper deals with acoustic flame suppression mechanics in a microgravity environment with measurements taken from an Arduino-based sensor system and validation of the technique. A Zippo lighter is ignited in microgravity and then displaced from the base of the flame and suppressed using surface interactions with single tone acoustic waves to extinguished the flame. The analysis of data collected shows that the acoustic flame suppression measurementtechniques are effective to finding qualitative differences in extinguishing in microgravity and normal gravity. Further, the results suggest that the suppression may be more effective in a microgravity environment than in a normal (1g) environment and may be a viable method of extinguishing fires during space flight.

Citation:

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