Saulson, Peter R.
Josh Goldberg and the physical reality of gravitational waves. (English) Zbl 1230.83008

Summary: We pay tribute to the contributions made by Josh Goldberg toward our understanding that gravitational waves are genuine physical predictions of general relativity. Josh played a central role in developing our understanding of how a binary star system generates gravitational waves. Another key contribution came through his patronage of the 1957 Chapel Hill Conference, in his role as funding officer for the Air Force’s support of research in gravitation. I examine in detail the discussion at the Chapel Hill Conference, and show how the question of the reality of gravitational waves was resolved by a recognition that one could, in principle, construct a detector for such waves. I trace the implications of this resolution in the work of Joseph Weber, who attended the Chapel Hill Conference, and of Rainer Weiss, who did not attend but who carefully studied the key paper that Felix Pirani presented there. I conclude with a brief discussion of how a few minor remaining puzzles were resolved some years later.

MSC:
83-03 History of relativity and gravitational theory
01A60 History of mathematics in the 20th century
01A70 Biographies, obituaries, personalia, bibliographies
83C35 Gravitational waves
83C40 Gravitational energy and conservation laws; groups of motions
83C25 Approximation procedures, weak fields in general relativity and gravitational theory

Keywords:
gravitational waves; quadrupole formula

Biographic references:
Goldberg, Josh

Full Text: DOI

References:


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