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Iranian telegraph operator, first to propose earthquake early warning system

SAN FRANCISCO – In 1909, an Iranian telegraph operator living in the remote desert town of Kerman noticed an unusual movement of the magnetic needle of his telegraph instrument. While other telegraph operators during the late 1800s and early 1900s noticed the phenomenon, the Iranian telegraph operator proposed an earthquake early warning system, as detailed in an article published today by the journal *Seismological Research Letters (SRL)*.

Nineteenth century telegraph operators in New Zealand, Switzerland, Chile, the Caribbean and elsewhere noted the usefulness of electric telegraph for recording natural phenomena. But the Iranian telegraph operator and cashier, named Yusef (Joseph), took the next step, suggesting the concept of a local earthquake warning system in a Persian newspaper, *The New Iran*.

He became aware of anomaly in 1897 and put the knowledge to use in 1909, using the six seconds of warning to urge his fellow dwellers to evacuate the building.

“I am confident if a more sophisticated instrument is built,” wrote Yusef, “a few minutes after the needle’s anomalous move, the earthquake will be felt. And if the system is connected to a big bell (an alarm system), it can be heard by all the people, and their lives will be saved.”

While J.D. Cooper, M.D. is credited with first proposing an early warning system in 1868, which he described in an article printed by *The San Francisco Daily Bulletin*, the Iranian telegraph operator living on the edge of desert likely had no access to American newspapers. Few newspapers existed at that time in Iran, when the literacy rate did not exceed five percent.

Manuel Berberian, who authored the *SRL* paper, called Yusef’s attempt to transfer knowledge in the service of others “priceless.” He noted that by the 100th anniversary of the printing of Yusef’s article, earthquakes had claimed the lives of more than 164,000 Iranians, and no plans for an early warning system are in development.



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The article, “Early Earthquake Detection and Warning Alarm System in Iran by a Telegraph Operator: A 116-Year-Old Disaster Prevention Attempt,” will appear in the September issue of *SRL*, which is published by the Seismological Society of America.

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