

Abu Bakr Karaji: A Mathematician Who Was Also, a Hydrogeologist! A Review of the "Hidden Waters Extraction"

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Abstract

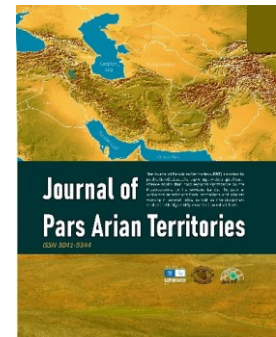
Abu Bakr Mohammad bin Hossein Karji is a renowned Iranian scientist, whose significant contributions to various fields have often gone unrecognized. Al-Karaji was born in 342 AH in Karaj, he was a contemporary of other prominent scholars such as Al-Biruni, Razi, and Avesina. His peak scientific accomplishments were around the year 1012. Karji was a mathematician focusing on arithmetic, algebra, and roots. However, his expertise extended to geology and underground water engineering, for which he is considered a genius. His most notable work, "Extraction of Hidden Waters," published 1020 years ago, introduced geometric and physical methods to calculate the earth's slope and extract underground water. Some of the theories presented in this book were validated in Europe in the 17th century, 700 years after its publication. In recognition of his achievements, Karji was honored at the 5th Iran Water Engineering and Management Festival in late 2014. The Persian translation of "Extraction of Hidden Waters" was completed in 1966 by HoseYn Xadiv Jam and corrected by Ahmad Aram. Unfortunately, much of his work and personal life remains undocumented, with many of his writings possibly lost. The approximate time of his death ranges between 1019 and 1029 AD. This article highlights Karji's genius in earth sciences and underground water engineering, emphasizing the significance of his contributions to mathematics and water resource management a thousand years ago.

Cite this article:

Abtahi Foroushani Z., Salmanpour R. (2024) Abu Bakr Karaji: A Mathematician Who Was Also, a Hydrogeologist! A Review of the "Hidden Waters Extraction". *Journal of Pars Arian Territories* 2: 65-84

DOI: 10.61186/jpat.2024.2.4

Publisher: Pars Arian Insistue © The Author(s).



ARTICLE HISTORY

Received: 27 July 2023
Revised: 9 October 2023
Accepted: 15 October 2023
Published: 18 November 2023

KEYWORDS

Abu Bakr Muhammad ibn al-Husayn (or: al-Hasan) al-Karaji, Mathematician, hidden groundwater extraction

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