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# Efficient Integrity Verification of Replicated Data in Cloud Computing System

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## Biographical Sketch

Jinxia Wei:
I was born in august 9th, 1987 in Hebei. After obtaining Doctor's degree from Beijing University of Posts and Telecommunications, I continue to work in Beijing University of Posts and Telecommunications. The integrity verification of cloud data storage is my major research.
Mingxu Yi:
I obtained my Doctor's degree from Beihang University. I am now working in Beihang University. My research interests include Numerical solution of fractional differential equations and Approximation of supersingular integral.
Lingwei Song:
I was born in April 6th, 1984 in Shandong. After graduating from Beijing University of Posts and Telecommunications, I continue to do research stay at school. I am a doctor on school of computer science now. The integrity verification of cloud data storage is my major research.
Thank you very much.

## Highlight

- The data owner uses the FHE algorithm to generate multiple data replicas.
- The scheme supports data block dynamic operation.
- The cloud server cannot cheat the data owner.
- The scheme supports the third party public validation.
- The authorized users can access the copies from the CSPs using a single secret key.

**Abstract**

More and more organizations outsource their data to remote Cloud Servers (CSs). Data owners rent Cloud Service Provider (CSP) infrastructure to store unlimited data by paying fees metered by month or gigabyte. For important sensitive data, data owners have increased availability, scalability and durability requirements. If the sensitive data holds these properties and can be stored correctly, the data owners will get great benefits. Thus, the data owners care about the confidentiality aspects as well. Therefore, they may store data replicas on multiple servers across