1166-05-161   **Emina Soljanin*** (`emina.soljanin@gmail.com`), NJ. *Recovery Graphs for Codes.*
A distributed system stores k data files across n servers, $n \geq k$. Files are elements of a finite field. Each server can store a single linear combination of files (storage constraint), and can simultaneously serve a fixed number of file access requests (capacity constraint). The system provides a data access service to simultaneous users interested in different files. The number of users and their interests can change. This talk considers two objectives. For a given redundant storage scheme, our goal is to determine all k-file request combinations that the system can serve concurrently. For a given set of k-file request combinations, our goal is to design a storage scheme that enables the system to handle the request with minimal resources (e.g., minimal n). In several ways, these problems generalize the well-known batch coding problem. We introduce a *recovery* graph representation of a code that allow us to establish equivalence between the posed problems and various known and new matching questions in graph theory. (Received February 16, 2021)