

Compressing Data

Through digitization, films that require 10,000 feet of tape now fit on a disk less than five inches in diameter. An important part of digitization is data compression, which involves converting a large file to a smaller version, from which the original (or a close approximation) can be recreated. Linear algebra, probability, graph theory and abstract algebra are among the areas of mathematics at the foundation of various compression algorithms that make modern technologies such as DVDs, HDTV and large databases, possible.

No one technique can fulfill the compression requirements of all media. For example, wavelet compression—based on a fairly new mathematical tool—works well with images and audio files, but not as well with text files. Yet regardless of the application, compression algorithms use redundancy and relatedness in data to make storage and transmission more efficient. Does compression work? U b t jdg.

For More Information: *Introduction to Data Compression*, Khalid Sayood, 1996.

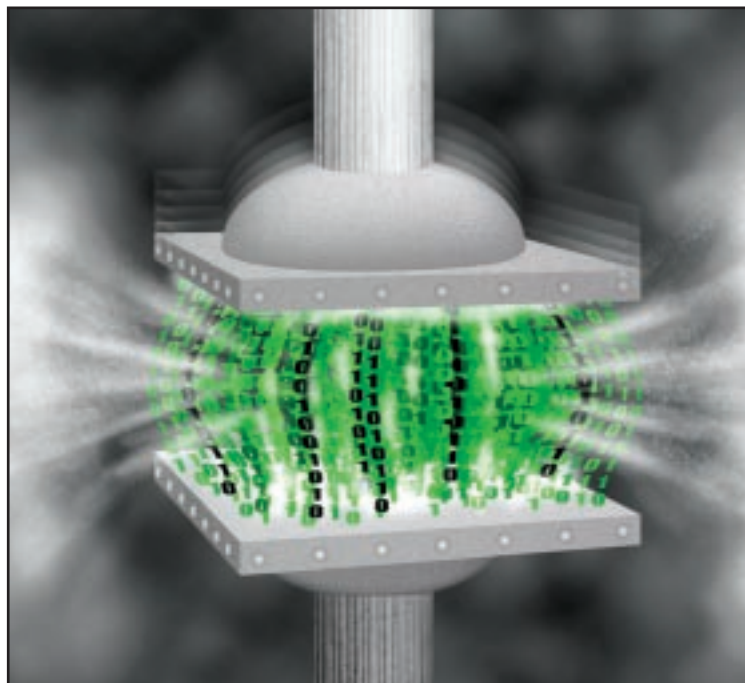


Image courtesy of Charles Trevelyan and the Millennium Mathematics Project.



The *Mathematical Moments* program promotes appreciation and understanding of the role mathematics plays in science, nature, technology, and human culture.

www.ams.org/mathmoments