

1145-VK-724      **Shangzhi Li\*** ([lisz@buaa.edu.cn](mailto:lisz@buaa.edu.cn)), Department of Mathematics, Beihang University, Beijing, Beijing , Peoples Rep of China. *Mathematics Experiments — Learning and Investigating Mathematics with the Help of Computers.*

This talk presents several interesting examples on Taylor's series, Fourier's series, pi calculations, and composing music, showing how one can learn and investigate mathematics through experiments with the help of computers. Each example relates to a significant problem and each presentation shows the real research process: how to understand the problem, how to model the problem mathematically, how to design and invent a way to solve the problem, how to explore different and more effective strategies, and how the new strategy leads to a more satisfying solution. This talk shows that the wise application of computers has brought us to a new era of learning and researching mathematics. (Received September 13, 2018)