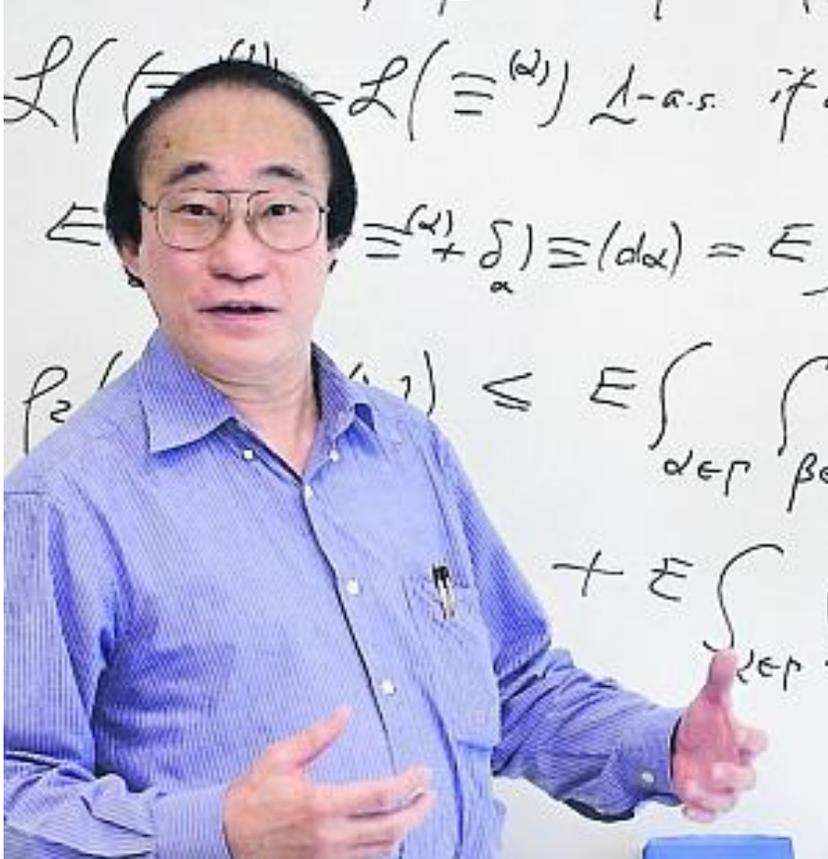


Home > Review > Tech & Science  
Dec 27, 2008  
PROF LOUIS CHEN

## Man who changed maths



Prof Chen's probability method is used the world over in various fields. -- ST FILE PHOTO

A DISCOVERY almost four decades ago has made Professor Louis Chen a well-known figure in the world of science.

The mathematician is famed for his development of the Chen-Stein Method, used widely in the study of molecular biology, computer science, and economics.

Prof Chen, 68, is director of the National University of Singapore's Institute for Mathematical Sciences.

He came up with the method to look at the probability of rare events occurring in 1971.

It has many applications, because it allows researchers to find out whether an occurrence is significant, or can be dismissed as pure chance.

It has been applied to many areas of mathematics, as well as fields of science and technology, and has been applied and adapted by scientists the world over.

The method is even taught in university courses, including those at Cambridge, Oxford and Stanford, and the University of Michigan.

Examples of its use range from birthday coincidences to head-runs in coin tosses; and random graphs, permutations and mappings.

In DNA sequence comparisons, for example, similarities can provide valuable clues to biological function.

'I still do research in this field, which has taken on a life of its own,' said Prof Chen.

He says there was no single eureka moment, just a progressive development of the technique, mostly done over a year.

'I didn't know it would have such widespread application, so I didn't publish for a few years,' he said.

Intellectual curiosity drove his work, which he published four years after it was developed, in 1975.

For his efforts, he was one of only two Singaporeans bestowed the Tan Chin Tuan professorship at the National University of Singapore in 2006.

This followed numerous international and local accolades.

In 2004, he became the first East Asian president of the US-based Institute of Mathematical Statistics.

In Europe, in 1997, he became the first Asian to be named president of the Bernoulli Society for Mathematical Statistics and Probability.

Since his achievement, there has been at least one other mathematician here to have his name in the annals of scientific history: Professor Shen Zuowei, 51.

The China national and Singapore permanent resident has been honoured for the Ron-Shen duality principle, which allows, for example, effective ways for recovering lost data in many applications in imaging science.

---