Testing Goodness of Fit

Testing whether the results of an experiment agree with a theoretical model is one of the most common tasks in any science. In its general form this leads to a class of problems known in statistics as goodness of fit tests. In this talk I will present some of the standard methods such as Pearson's chi square test, the Kolmogorov-Smirnov test and a number of others. I will discuss their historical development and a number of controversies. I will also discuss ideas on how to judge their relative merits.