Abstract. Financial derivatives account for more than half of financial instruments in the modern market being the fundamental tool for risk hedging in portfolio management. Many complex exotic options have been designed and put into market for various needs. Those products typically involve multiple assets with long time horizons and, consequently, there has been a considerable demand of accurate models and efficient computational techniques for treating nonlinearities and complexities in pricing and hedging financial derivatives. This talk will focus on some latest achievements from the mathematical sides for financial derivative computations. At the same time, we will propose possible collaborated teaching and research in the exciting fields.