1145-60-791 **David Saunders*** (`dsaunders@uwaterloo.ca`), Statistics and Actuarial Science, University of Waterloo, 200 University Avenue West, Waterloo, Ontario N2N3M3, Canada, and **Fei Meng** (`feimengchen@yahoo.com`), Statistics and Actuarial Science, University of Waterloo, 200 University Avenue West, Waterloo, Ontario N2N3M3, Canada. *Mathematical Problems Arising from Hedge Fund Fee Structures.*

Traditional fee structures for hedge funds involve a flat fee expressed as a percentage of assets under management, together with a performance fee that has the structure of a call option. This structure has disadvantages for investors both in terms of expenses, as well as the incentives it provides for hedge fund managers. We will discuss a new fee structure that has been adopted by some funds in the industry, referred to as the shared-loss fee structure. In this framework, in return for receiving upside participation, the fund manager provides some downside protection against losses to the investors. We study a number of problems including the optimal stopping problem of an investor deciding when to withdraw funds from a hedge fund operating with a shared loss fee structure. We will consider properties of the value function, characterized as the solution of a variational inequality, and the small-time behaviour of the stopping boundaries. (Received September 14, 2018)