Innovation and Product Positioning: When to Add or Replace

Cláudia Nunes[1],
joint work with Anne G. Balter[2], Diogo Pereira[1], Peter Kort[2]

[1] *CEMAT and IST*
[2] *Tilburg University*

We consider a monopolist firm, currently active in the market, which has the opportunity to innovate by introducing a new product. This involves decisions about the timing, quality, and positioning relative to the established product. To study this problem, we use the Hotelling line model. Moreover, we introduce demand uncertainty. The main result is that when the established product is sufficiently profitable, it will be replaced by the new product in the long run. This result is reinforced by demand uncertainty, which delays the new product introduction. Adding the new product alongside the established product so that they are both available for sale after the new product is introduced, may occur when the unit production cost of the new product is small. In the latter scenario, a hysteresis region may arise where the firm waits, while at lower demand levels, it immediately adds the new product alongside the established product, and at higher demand levels it immediately replaces the established product with the new one.