Grigorova, Miryana (Bielefeld University) — **Doubly Reflected BSDEs and Non-Linear Dynkin Games: beyond right-continuity**

We formulate a notion of doubly reflected BSDE in the case where the barriers ξ and ζ are completely irregular. Under a technical assumption (a Mokobodzki-type condition), we show existence and uniqueness of the solution.

In the case where ξ is right upper-semicontinuous and ζ is right lower-semicontinuous, the solution is characterized in terms of the value of a corresponding $\mathcal{E}^g$-Dynkin game, that is, a game problem over stopping times with (non-linear) g-expectation, where g is the driver of the doubly reflected BSDE.

In the general case where the barriers do not satisfy any regularity assumptions, the solution of the doubly reflected BSDE is related to the value of "an extension" of the previous non-linear game problem over a larger set of "stopping strategies" than the set of stopping times. This characterization proves useful in establishing a comparison result and *a priori* estimates with universal constants.

The talk is based on a joint work with P. Imkeller, Y. Ouknine, and M.-C. Quenez.