

# A linear-quadratic optimal control problem of forward-backward stochastic differential equations with partial information

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**Abstract:** In this talk, we will present an approach to study a linear-quadratic optimal control problem of forward-backward stochastic differential equations, where observation coefficient is linear with respect to state  $x$ , and observation noise is correlate with state noise. Two optimality conditions and a feedback representation of optimal control are derived. Closed-form optimal solutions are obtained in some particular cases. As an application of the optimality conditions, an example of generalized recursive utility is explicitly solved. This talk is based on a joint paper with Wang and Wu.

## References

- [1] G.C. Wang, Z. Wu and J. Xiong (2013). A linear-quadratic optimal control problem of forward-backward stochastic differential equations with partial information. Conditionally accepted by *IEEE Transactions on Automatic Control*.