

## Bilinear control problems associated to chemotaxis models

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### SUMMARY

Chemotaxis models try to reproduce the spatial transport of the density of a living organism with respect to a chemical substance. Other interactions between both variables are considered such as production and/or consumption of chemical by cells, degradation of chemical or logistic reaction for living organisms. For several purposes, the control over the system is suitable. In this talk, we consider a bilinear control problem acting on the chemical substance equation and analyze the existence of solution, and the obtention of first-order optimality conditions for local optimal solutions by using a Lagrange multipliers theorem.

**Keywords:** Chemotaxis model, bilinear optimal control, optimality conditions

**AMS Classification:** 35K51, 35Q92, 49J20, 49K20

### References

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