

## **A general stochastic maximum principle for singular control problems**

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### **Abstract**

We consider the stochastic control problem in which the control domain need not be convex, the control variable has two components, the first being absolutely continuous and the second singular. The coefficients of the state equation are nonlinear and depend explicitly on the absolutely continuous component of the control. We establish a maximum principle, by using a spike variation on the absolutely continuous part of the control and a convex perturbation on the singular one. This result is a generalization of Peng's maximum principle to singular control problems.

**Keywords** maximum principle; singular control; adjoint equation; variational inequality.

### **Link**

[http://apps.webofknowledge.com.www.sndl1.arn.dz/full\\_record.do?product=UA&search\\_mode=On eClickSearch&qid=7&SID=U1LIS2LUJ38aIS36Mg&page=1&doc=9&cacheurlFromRightClick=no](http://apps.webofknowledge.com.www.sndl1.arn.dz/full_record.do?product=UA&search_mode=On eClickSearch&qid=7&SID=U1LIS2LUJ38aIS36Mg&page=1&doc=9&cacheurlFromRightClick=no)