

Szatzschneider Smigielska Wojciech

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Para: Szatzschneider Smigielska Wojciech
Asunto: QMF 2011 - Abstract Acceptance

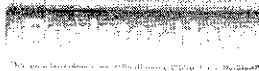


6th June 2011

Dear Wojciech

Thank you for submitting your abstract "Cooperation between agents with environmental applications" for presentation at the QMF 2011 Conference. The Organising Committee is pleased to advise that your paper has been accepted for presentation at the conference. You will have 20 minutes for your presentation.

QMF has attracted an extremely high level of interest and a large number of submissions, so it is important that you register as soon as possible. As we have a waiting list of other submitters to whom we were not able to offer an initial placement, please let us know as soon as possible if you are not able to attend. Please click on the link below to register your attendance.



Please indicate during the registration process which days of the conference and social events you will be attending. We encourage you to register your partner as an accompanying person at the conference, as Sydney is a wonderful place to visit during the Australian summer. Accompanying persons are most welcome to register for any of the conference social events. If you wish to book accommodation at the conference venue, **we strongly urge you to do this as early as possible**, as there is a strictly limited number of rooms at special rates pre-reserved for QMF participants. Early bird registrations at the Hilton Hotel will receive complimentary in-room wi-fi connection for the duration of your stay.

Two workshops for practitioners will take place during the days preceding the conference:
A two-day workshop on "**LIBOR Market Models and Beyond**" will be presented by Mark Joshi on **12-13 December 2011**; and a one day workshop on "**Stochastic Portfolio Management**" with Banner, de Silva, Fernholz, Fouque, Hulley, Kelly, Platen, Satchell will take place on **13 December 2011**.

Please be aware that most delegates from overseas will require an Australian visa. Please contact the Australian Consulate in your country to determine which specific requirements will apply to you. We recommend that you make your travel arrangements well in advance to allow time for visa processing and because flights are heavily booked during December.

Based on our experience with past QMF conferences it is essential for font sizes to be at least 22 points for your electronic presentation, and that you limit the number of lines per slide to 8. Please email your electronic presentation as a PDF file (remove security settings) to the Conference Coordinator by **31 October 2011** at qmf@conferenceonline.com.au.

Visit the conference web site at www.qfrc.uts.edu.au/qmf for the most up-to-date information about the conference. If you have any further enquiries, do not hesitate to contact our Conference Coordinator, Julie Jerbic, on +61 7 55 808 677 or email: qmf@conferenceonline.com.au.

We look forward to seeing you at QMF 2011 and we trust that you will enjoy your stay in Sydney.

Handwritten signature of E. Platen.

Handwritten signature of G. Joshi.

Yours sincerely,

Handwritten signature of Julie Jerbic.

Cooperation between agents with environmental applications

We consider and compare two forms of cooperation between 2 identical agents in Principal-Agent framework, and deal with agent problem only.

Certificate of improvement pays $C - (X(1) + Y(1))^2$ if positive, and if negative, an additional tax must be paid.

$dX(t) = v(t)X(t)dW(t) + av(t)X(t)dt - bu(t)$ until hitting 0. $X(0) > 0$, $u(t)$ agent action, and $v(t)$ some process. $Y(t)$ has identical structure and both processes are independent. The cost of improvements is quadratic. Optimal $u(t)$ becomes exponential martingale $bxexp(-a^2/2 - aW(t))$, (z is the Lagrange multiplier) for each agent if the corresponding process is positive, and 0 otherwise. In fusion case we consider the product of corresponding independent martingales. The method goes through dual approach. Two forms of cooperation are the following:

1. Collusive-one agent can make improvements only in his domain.
2. Fusion-one agent can make improvements also in others agent area.

In practice, fusion could lead to transfer of technologies, which becomes one of the essential answers in environmental topics. Although $X(t)$ and $Y(t)$ or in the case of fusion the sum of them can be solved explicitly, the time of hitting 0 is the time of possibility of exercise Asian Call, and make difficult calculations of z -as, even in the case of $v(t) = 1$. In collusive case the optimal $X(t)$ is a kind of European Call. Considering different agents is unclear how to formulate the problem. In the collusive case optimal solution for one agent depends on the action of the counterpart.