

1054-60-147

Amy R Ward* (amyward@usc.edu), University of Southern California, Bridge Memorial Hall - BRI 401H, Los Angeles, CA 90089-0809, and **Mor Armony**. *Blind Fair Routing in Large-Scale Service Systems with Heterogeneous Customers and Servers*.

In a large-scale service system with heterogeneous customers and servers, there are two relevant controls: routing and scheduling. The routing decides which server should handle an arriving customer when more than one server is available. The scheduling decides which customer a server that has just become free should serve when there is more than one customer waiting. We propose a control policy for routing and scheduling that is both blind and fair. It is blind in the sense that it requires no information regarding system parameters. It is fair, to both customers and servers, in the sense that it equalizes the steady-state waiting time across different customer classes, and the steady-state idle time across different server pools (or, more generally, a weighted measure of customer wait time and server idle time). Finally, we analyze the performance of our proposed policy, and show that, in certain regions of the parameter space, its performance is very close to the performance of a policy that asymptotically minimizes customer waiting time subject to a constraint on equalizing server idle time. (Received September 11, 2009)