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Researchers Tell Umpires Where to Go

After formulating the "traveling umpire problem," researchers developed solutions to get ump crews to every major league baseball game. Steve Mirsky reports

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The traveling salesman problem is a favorite math conundrum: if a salesman has to visit a bunch of cities, how do you get him to all of them once via the shortest possible route. But the traveling salesman's predicament pales in comparison to figuring out the best ways to get four-man crews of umpires to every major league baseball game. A research team attacked the problem for the last few years. Their solution appears in *Interfaces.* It's a journal of operations research. [Michael Trick, Hakan Yildiz and Tallys Yunes, "Scheduling Major League Baseball Umpires and the Traveling Umpire Problem"]

In addition to minimizing travel, here are some of the umpire constraints. Crews should visit each MLB city at least once. They should work each team at home and on the road. They should not work more than 21 days in a row. They should not ump any one team's games for more than four series all year. There are plenty more.

The researchers first had to develop the question, dubbed the "traveling umpire problem." They used brute-force computation and heuristics for their solutions. The result was good enough for Major League Baseball to adopt the last three seasons. Previously, a former umpire made the schedule. That guy is out.

—Steve Mirsky

[*The above text is a transcript of this podcast.*]