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Directed last passage percolation on the two dimensional lattice is exactly solvable when the weight distribution is i.i.d. exponential or geometric. The reason for that is the Burke property associated to a model with "boundaries".

We investigate the solvable model further in order to generalize the idea of boundaries into the general setting, and we compute a variational formula for passage times for more general weights. The variational formula is given in terms of Busemann functions and has a unique explicit minimizer under some restrictive assumption on the environment.

Versions of the approach will be transferred to polymer models.

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