

We investigate the convergence rate of the recently proposed subgradient-push method for distributed optimization over time-varying directed graphs. The subgradient-push method can be implemented in a distributed way without requiring knowledge of either the number of agents or the graph sequence; each node is only required to know its out-degree at each time. Our main result is a convergence rate of $O((\ln t)/t)$ for strongly convex functions with Lipschitz gradients even if only stochastic gradient samples are available; this is asymptotically faster than the $O((\ln t)/\sqrt{t})$ rate previously known for (general) convex functions.