

Some results of Week 4 for comparison

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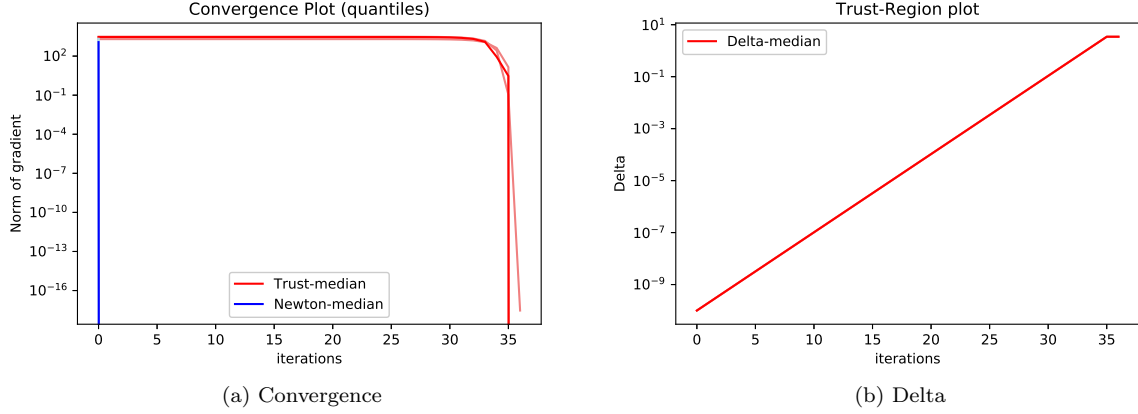


Figure 1: Results comparing Trust-region-newton with Newton on Ellipsoid, f_1 when using $\delta_0 = 10^{-10}$. Top: plotted is $\|\nabla f(x_k + p_k)\|$, the norm of the gradient of the point that is evaluated at each iteration. Note that evaluated points might not be accepted. Example runs are chosen based on the number of steps until convergence. Shown are the runs representing 25,50 and 75% quantiles of 50 runs. Starting-points are sampled from a standard-normal distribution. Bottom: Value of δ_k for the three runs of trust-region Newton depicted on the left.

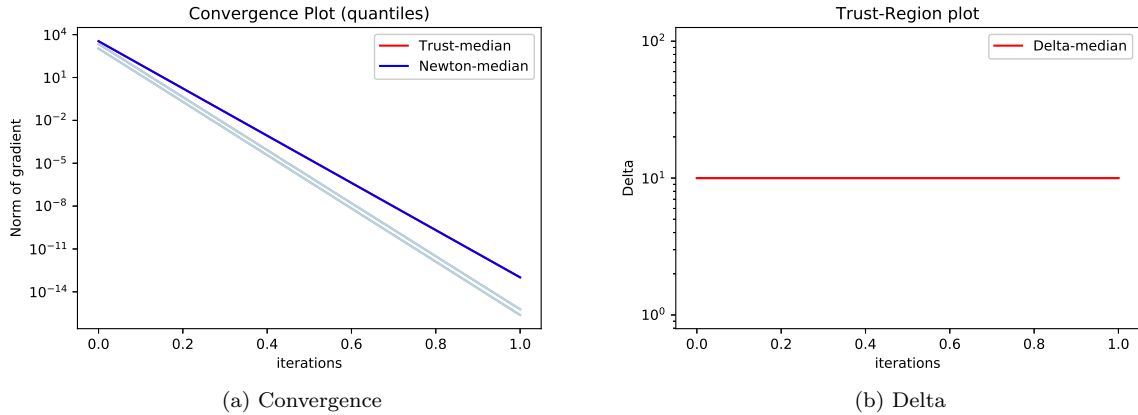


Figure 2: Results comparing Trust-region-newton with Newton on Ellipsoid, f_1 when using $\delta_0 = 10$. Top: plotted is $\|\nabla f(x_k + p_k)\|$, the norm of the gradient of the point that is evaluated at each iteration. Note that evaluated points might not be accepted. Example runs are chosen based on the number of steps until convergence. Shown are the runs representing 25,50 and 75% quantiles of 50 runs. Starting-points are sampled from a standard-normal distribution. Bottom: Value of δ_k for the three runs of trust-region Newton depicted on the left.

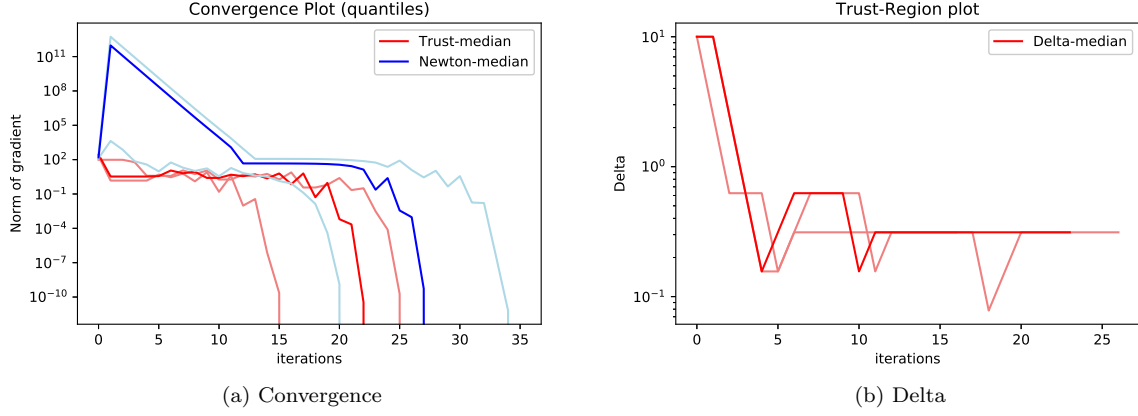


Figure 3: Results comparing Trust-region-newton with Newton on Rosenbrock, f_2 when using $\delta_0 = 10$. Top: plotted is $\|\nabla f(x_k + p_k)\|$, the norm of the gradient of the point that is evaluated at each iteration. Note that evaluated points might not be accepted. Example runs are chosen based on the number of steps until convergence. Shown are the runs representing 25,50 and 75% quantiles of 50 runs. Starting-points are sampled from a standard-normal distribution. Bottom: Value of δ_k for the three runs of trust-region Newton depicted on the left.

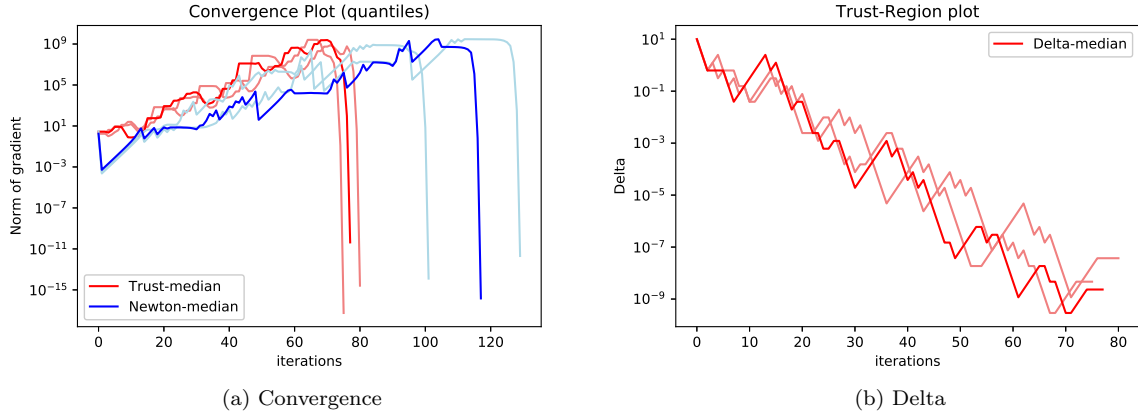


Figure 4: Results comparing Trust-region-newton with Newton on Log-Ellipsoid, f_3 when using $\delta_0 = 10$. Top: plotted is $\|\nabla f(x_k + p_k)\|$, the norm of the gradient of the point that is evaluated at each iteration. Note that evaluated points might not be accepted. Example runs are chosen based on the number of steps until convergence. Shown are the runs representing 25,50 and 75% quantiles of 50 runs. Starting-points are sampled from a standard-normal distribution. Bottom: Value of δ_k for the three runs of trust-region Newton depicted on the left.

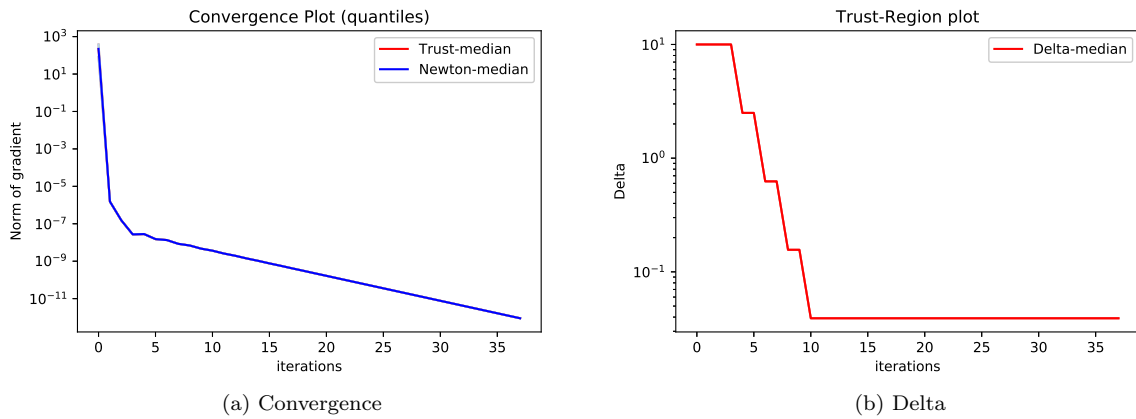


Figure 5: Results comparing Trust-region-newton with Newton on Attractive-Sector, f_5 when using $\delta_0 = 10$. Top: plotted is $\|\nabla f(x_k + p_k)\|$, the norm of the gradient of the point that is evaluated at each iteration. Note that evaluated points might not be accepted. Example runs are chosen based on the number of steps until convergence. Shown are the runs representing 25,50 and 75% quantiles of 50 runs. Starting-points are sampled from a standard-normal distribution. Bottom: Value of δ_k for the three runs of trust-region Newton depicted on the left.