

q6

October 28, 2019

0.1 Question 6 (5 marks): Compare all the methods that you implemented above. Make a plot where in the y-axis is the value of the smoothed objective function and in the x-axis the number of iterations. Compare the methods using the same λ and μ that you used in Q1.

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[64]: fig = plt.figure(figsize=(16, 9))
ax = fig.add_subplot(1, 1, 1)
ax.plot(f_vals_acc_prac, label="Practical Accelerated", linewidth=3.0, color="black")
ax.plot(f_vals_acc_lip, label="Simplified Accelerated + Lip", linewidth=3.0, color="green")
ax.plot(f_vals_ls, label="Simple Line Search", linewidth=3.0, color="magenta")
ax.plot(f_vals_arm, label="Armijo Line Search", linewidth=3.0, color="blue")
# ax.set_yscale('log')
ax.legend(prop={'size': 15}, loc="upper right")
plt.xlabel("iteration $k$", fontsize=25)
plt.ylabel("Smoothed Objective Function", fontsize=25)
ax.grid(linestyle='dashed')
plt.savefig('bar.pdf')
```

