Reading Assignment 1

Summarize Reference [1], [2] in 2 pages (use an additional third page only for references). The report should be 11pt. (times), double-column, in LaTeX, and has to be written entirely in your own words. The main points to address are the following.

(i) Abstract: A short preface of [1].
(ii) Relevance: Why do you think the problem is important? Cite related literature to make your case.
(iii) Problem Formulation: In English and then in mathematics, describe the problem that is being solved. Explain the mathematical notation and terminology.
(iv) Solution: Explain the procedure described in [1] to solve the corresponding problem. You may write the main results and then give the intuition behind the proofs.
(v) Simulations: Either reproduce relevant figures from [1], or, create your own experimental setup and explain the results. Be creative and explore circumstances that are not explicitly addressed, e.g. how about time-varying graphs.
(vi) Conclusions and Extensions: Summarize your findings and how do you think the approach can be extended or generalized. Cite related literature where further work based on [1] is considered.
(vii) Future Work: In a brief paragraph, describe your ideas, extensions, and applications that are not considered before and where the results in [1] may be applied.

Some things to remember. You are restricted to 2-pages and you have to find a way to get your point across. Use the space wisely and place the figures efficiently. Use figures and/or block diagrams, where applicable, to illustrate your description. Make sure that the fonts in the figures are readable and the figures have labeled axes. *Be creative in creating space.* Pay attention to English usage and punctuation; pay special attention to technical writing. Do some literature survey: may be you can find a 'simpler' version of this paper.

I. Some Useful Symbols

- Math environment: $x + y = 4$.
- Boldfaced with subscript: $\mathbf{x}_{k+1}$
- Writing Equation, Eq. (1):

$$\mathbf{x}_{k+1} = A\mathbf{x}_k. \tag{1}$$

- Multiple Equations, Eq. (2):

$$\begin{aligned} \mathbf{x}_{k+1} &= A\mathbf{x}_k, \\ &= A^{k+1}\mathbf{x}_0. \end{aligned} \tag{2}$$

- Vectors and Matrices:

$$\mathbf{v} = \begin{bmatrix} v_1 \\ v_2 \\ v_3 \end{bmatrix}, \qquad A = \begin{bmatrix} 1 & 0 & 2 \\ 0 & 0 & 4 \\ 3 & 2 & 0 \end{bmatrix}.$$

- Greek: $\alpha, \beta, \gamma, \nu, \mu, \xi, \eta, \zeta, \omega, \Omega, \delta, \Delta$.

A. Lemmas and Theorems

Lemma 1: This is Lemma 1 in Section I-A.

Proof: The proof is obvious. ■

Theorem 1: This is Theorem 1 in Section I-A.

Proof: The proof is obvious. ■

B. Figures

This is a section on figures, see Fig. 1.

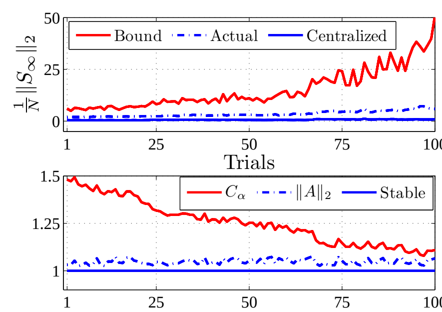

Fig. 1. This is Fig. 1.

References

[1] L. Xiao and S. Boyd, "Fast linear iterations for distributed averaging," *Systems and Controls Letters*, vol. 53, no. 1, pp. 65–78, Apr. 2004.

[2] L. Xiao, S. Boyd, and S. Lall, "A scheme for robust distributed sensor fusion based on average consensus," in *International Conference on Information Processing in Sensor Networks*, Apr. 2005, pp. 63–70.