

# Research Methods in computer science

Fall 2013

Lecture 13

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October 10, 2013

# Agenda

Graphs

HW6 and HW7 feedback

HW8

# Carte Figurative des pertes successives en hommes de l'Armée Française dans la campagne de Russie 1812-1813.

Dessiné par M. Micaud, Inspecteur Général des Ponts et Chaussées en retraite Paris, le 20 Novembre 1869.

Les nombres d'hommes présents sont représentés par les largeurs des zones colorées à raison d'un millimètre pour dix mille hommes; ils sont de plus écrits en lettres des zones. Le rouge désigne les hommes qui ont péri en Russie, le noir ceux qui ont survécu. Les renseignements qui ont servi à dresser la carte ont été puisés dans les ouvrages de M. M. Chiers, de Légar, de Fozendac, de Chambray et le journal inédit de Jacob, pharmacien de l'Armée depuis le 28 Octobre. L'on m'eux faire juger à l'œil la diminution de l'armée, j'ai supposé que les corps du Prince Jérôme et du Maréchal Davoust qui avaient été détachés sur Minsk et Mohilow et qui rejoindront Orscha et Witebsk, avaient toujours marché avec l'armée.

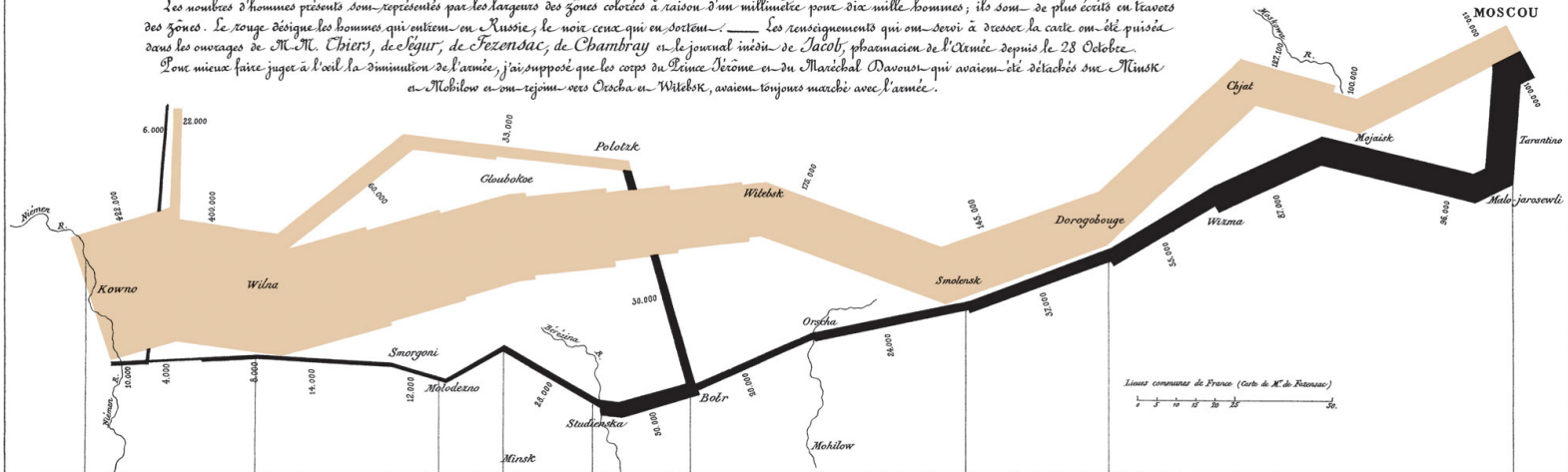
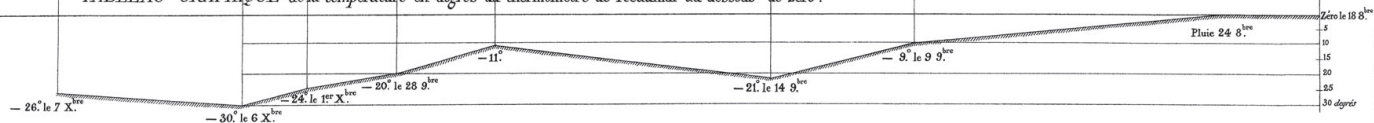
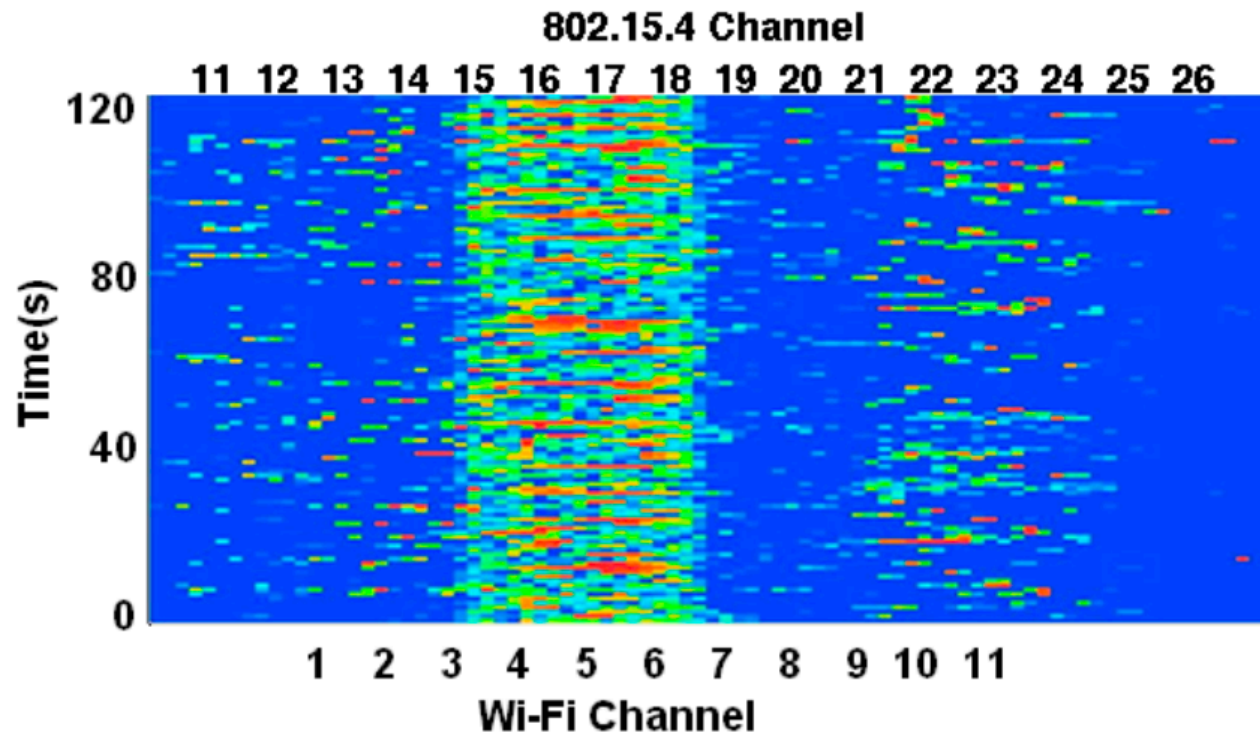


TABLEAU GRAPHIQUE de la température en degrés du thermomètre de Réaumur au dessous de zéro.

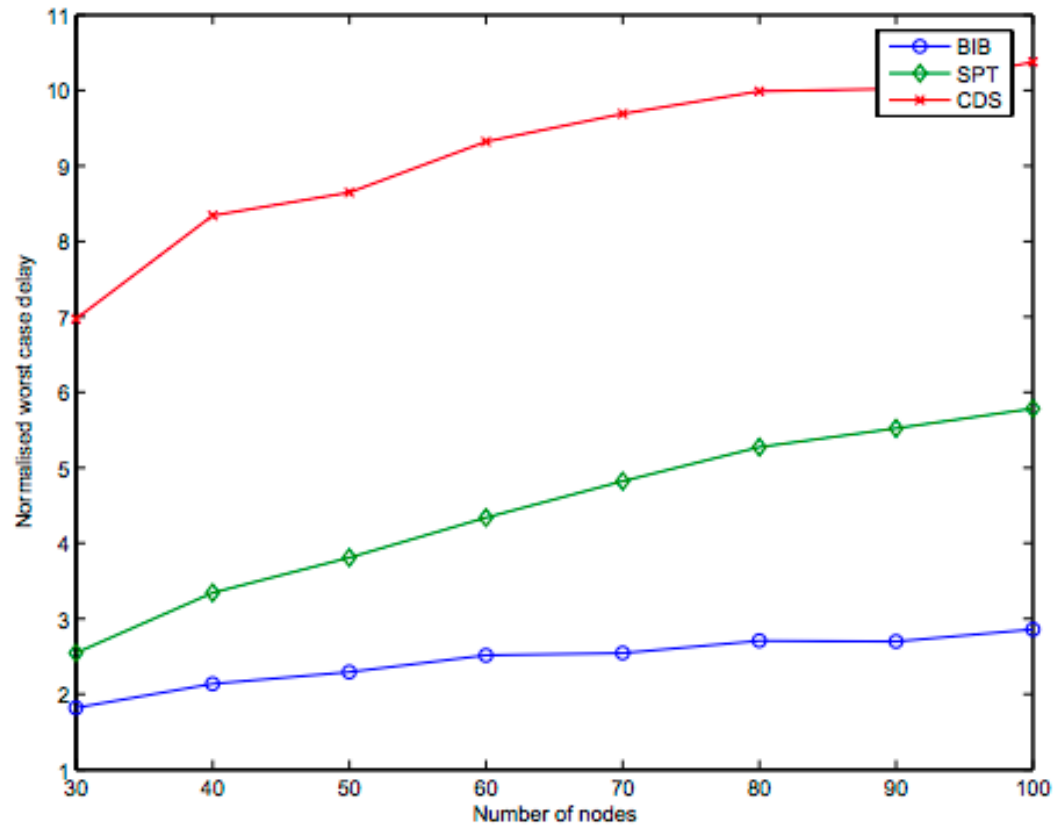
Les Cosaques passent au galop le Niémen gelé.



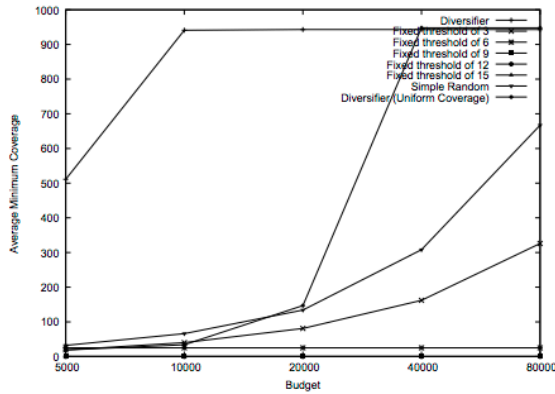


Example of a heatmap (red – high, blue – low)

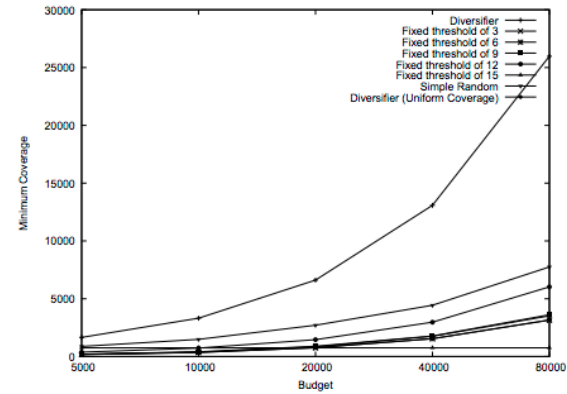
# Annotations



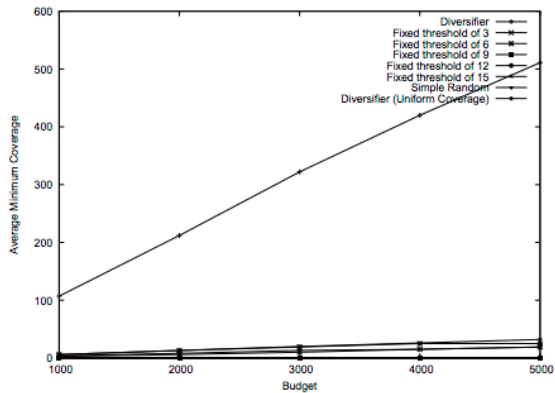
Overlapping legend  
Legend order different from line order



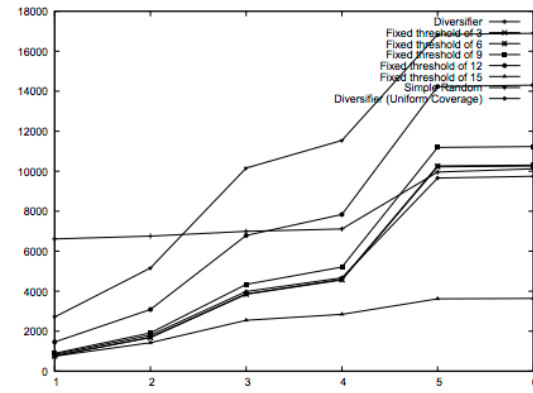
(a) Higher range of budgets between 0.5% and 8%



(a) Minimum coverage with varying budgets



(b) Lower range of budgets between 0.1% and 0.5%

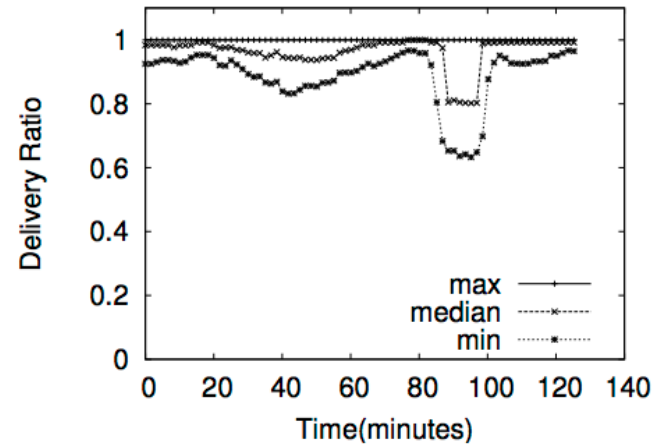
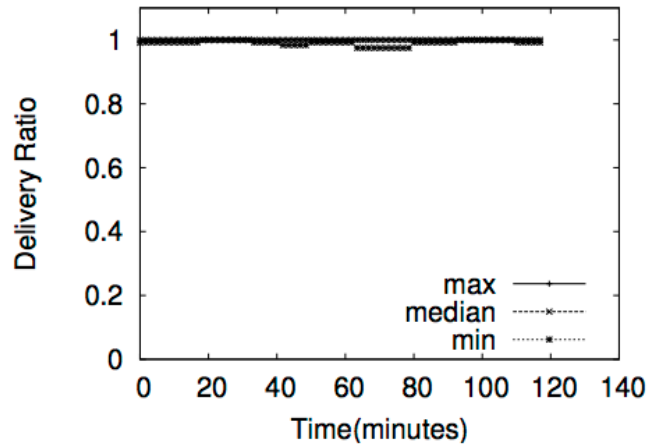


(b) Coverage on the least covered features

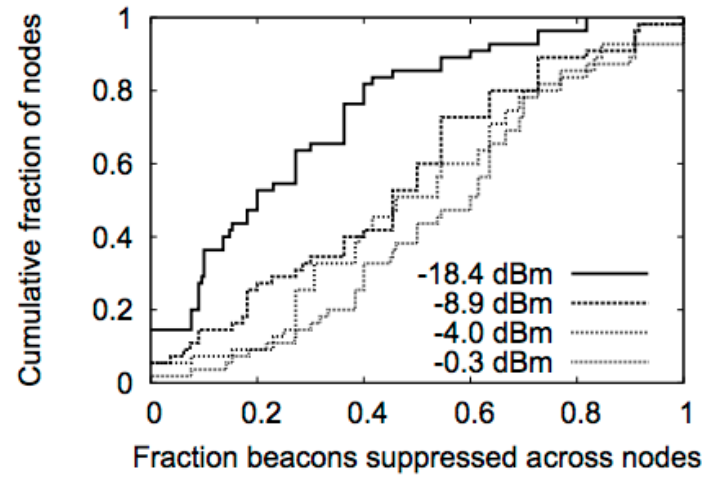
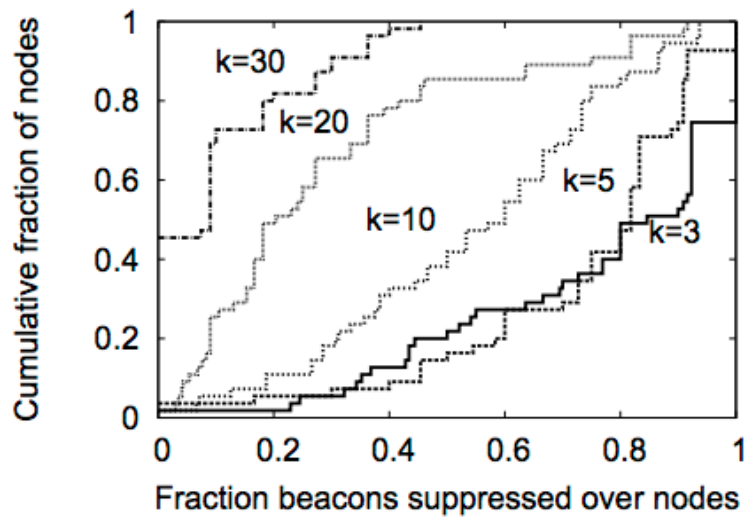
**Figure 2: The average minimum coverage achieved by various algorithms over 100 real world data sets of 1M items each.**

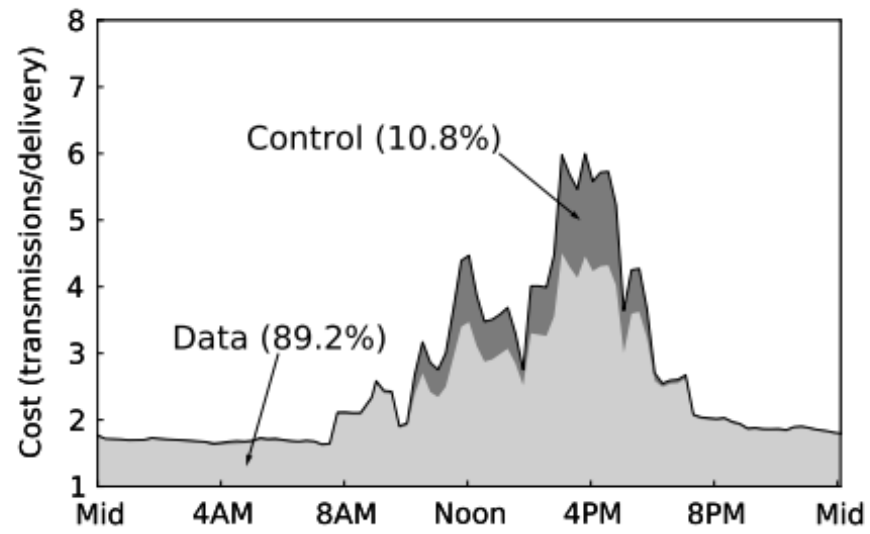
**Figure 4: Experimental results for the Independent data set**

Legend overlapping data









# Tools

matplotlib

Gnuplot

Excel

Inkspace

Powerpoint

Learn about: Vector format, high resolution graphics

# HW8

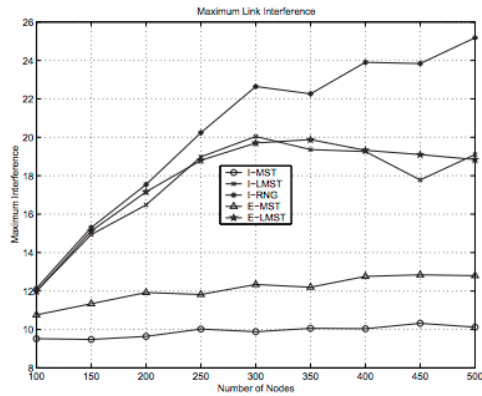
Snapshot of your 6-page research paper.

Introduction

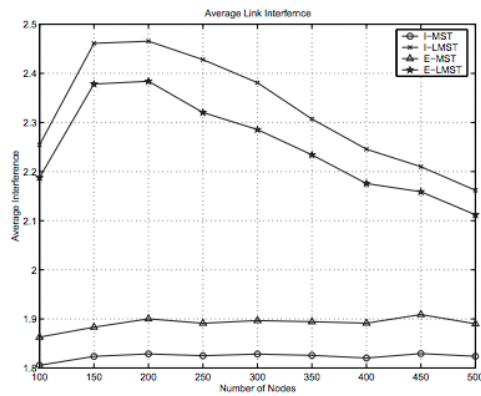
Related Work

Experiments Planned

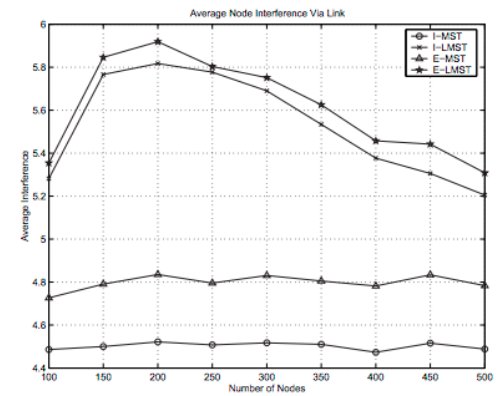
Font size



(a) MMLIP problem

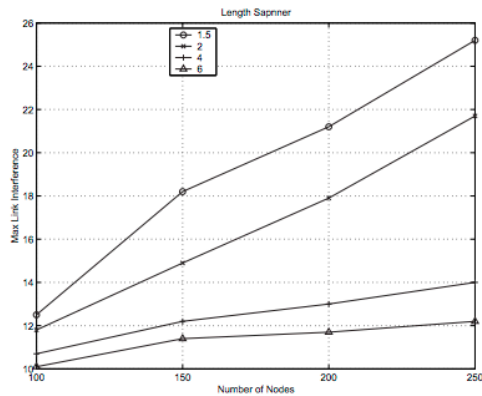


(b) MALIP Problem

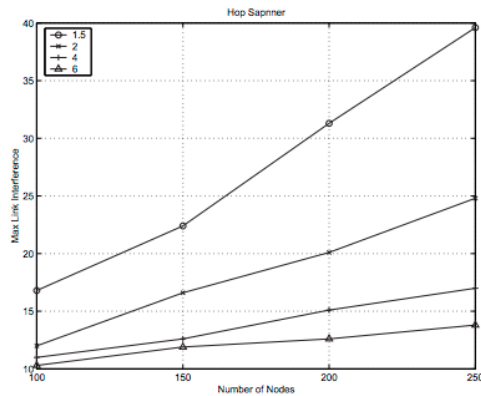


(c) MANILP Problem

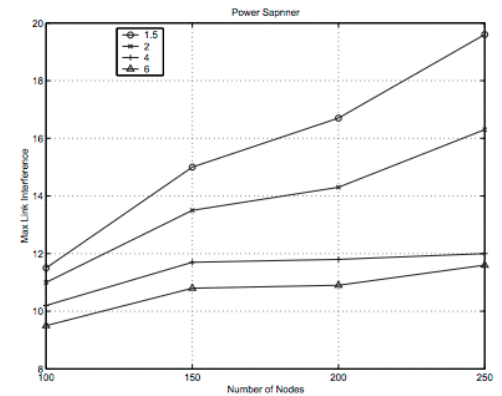
Fig. 4. Performances of various structures for a number of link-interference related problems.



(a) length spanner



(b) hop spanner

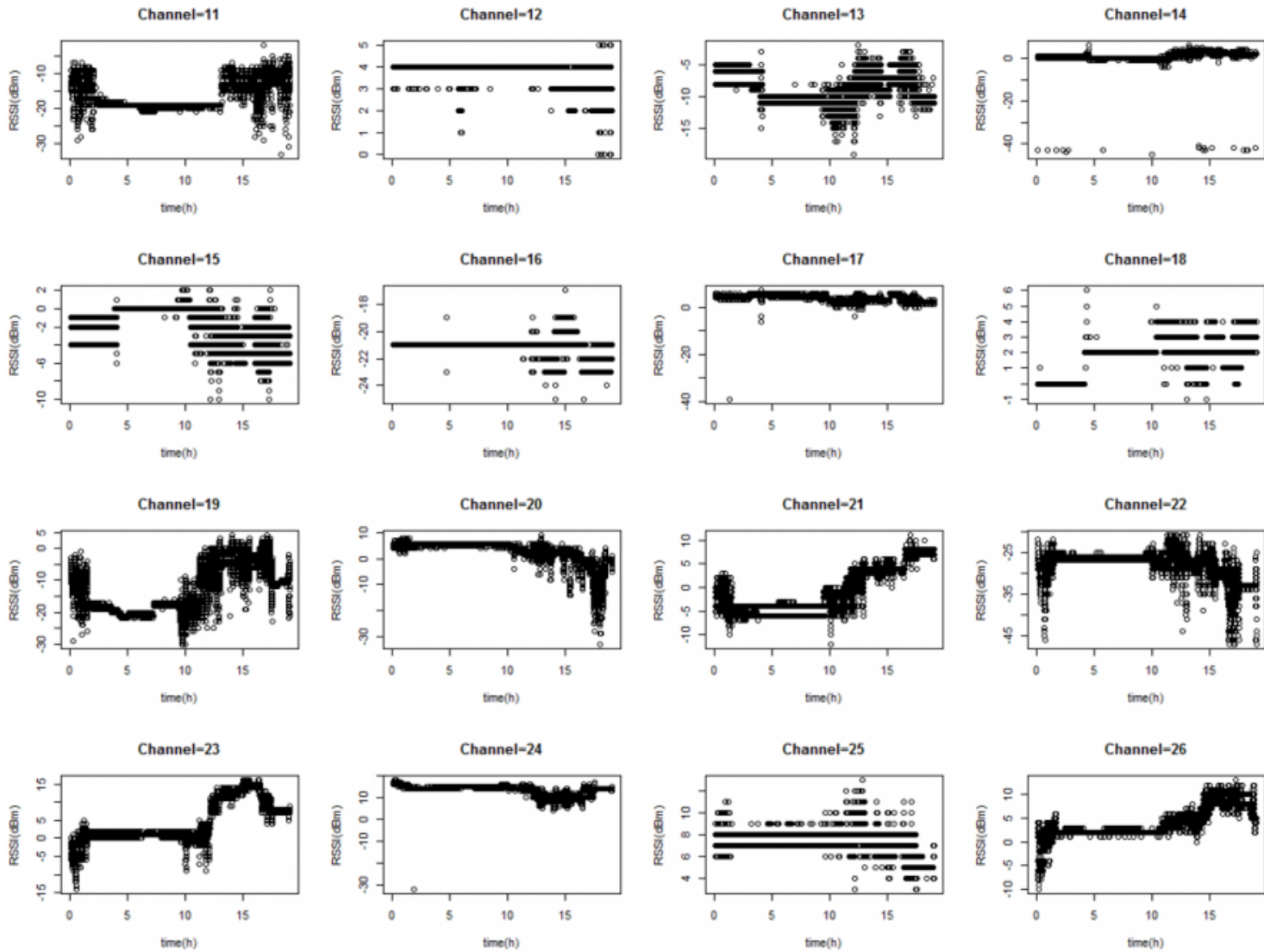


(c) power spanner

Fig. 5. Minimize the maximum link interference with different spanning ratio requirements.

Unusual placement of legends  
 Font size of axis labels too small

Range



These graphs do not use consistent y-axis range so hard to compare across graphs