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## Model Order Selection and Eigen Similarity based Framework for Detection and Identification of Network Attacks

--Manuscript Draft--

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<b>Full Title:</b>	Model Order Selection and Eigen Similarity based Framework for Detection and Identification of Network Attacks	
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<b>Abstract:</b>	<p>Novel schemes for attack detection are crucial to identify adaptive malicious traffic coming from sources that are quickly mobilized by attackers in high throughput communication networks. In this context, signal processing techniques have been applied to attack detection due to their capability to detect anomalies that are previously unknown, i.e. blind detection. This paper proposes a signal processing framework for the detection and identification of network attacks using concepts of model order selection (MOS), eigenvalues and similarity analysis. In order to validate our proposed framework, we consider a network traffic sample that contains malicious activity such as denial of service (DoS) and port probing. We propose to model the network traffic as a superposition of components, namely, user's operations (legitimate traffic), network service operation not related to the user (noise) and the malicious activity. The experiments performed in a real network show that the proposed blind detection approach achieves satisfactory levels of accuracy in terms of timely detection and identification of TCP/UDP ports under attack.</p>	
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4 This is pdfTeX, Version 3.14159265-2.6-1.40.16 (TeX Live 2015/W32TeX)
5 (preloaded format=pdflatex 2015.7.29) 16 NOV 2015 20:03
6 entering extended mode
7   restricted \writel8 enabled.
8   %&-line parsing enabled.
9 **./2014eurasip.tex
10 (./2014eurasip.tex
11 LaTeX2e <2015/01/01> patch level 2
12 Babel <3.91> and hyphenation patterns for 79 languages loaded.
13 (c:/TeXLive/texmf-local/tex/latex/aries/biomedcentral/bmcart.cls
14 Document Class: bmcart 2012/06/27BioMed Central class (VS)
15 (c:/TeXLive/2015/texmf-dist/tex/latex/base/article.cls
16 Document Class: article 2014/09/29 v1.4h Standard LaTeX document class
17 (c:/TeXLive/2015/texmf-dist/tex/latex/base/size10.clo
18 File: size10.clo 2014/09/29 v1.4h Standard LaTeX file (size option)
19 )
20 \c@part=\count79
21 \c@section=\count80
22 \c@subsection=\count81
23 \c@subsubsection=\count82
24 \c@paragraph=\count83
25 \c@subparagraph=\count84
26 \c@figure=\count85
27 \c@table=\count86
28 \abovecaptionskip=\skip41
29 \belowcaptionskip=\skip42
30 \bibindent=\dimen102
31 )
32 \mathindent=\dimen103
33 (c:/TeXLive/2015/texmf-dist/tex/latex/graphics/keyval.sty
34 Package: keyval 2014/10/28 v1.15 key=value parser (DPC)
35 \KV@toks@=\toks14
36 ) (c:/TeXLive/2015/texmf-dist/tex/latex/xcolor/xcolor.sty
37 Package: xcolor 2007/01/21 v2.11 LaTeX color extensions (UK)
38 (c:/TeXLive/2015/texmf-dist/tex/latex/latexconfig/color.cfg
39 File: color.cfg 2007/01/18 v1.5 color configuration of teTeX/TeXLive
40 )
41 Package xcolor Info: Driver file: pdftex.def on input line 225.
42 (c:/TeXLive/2015/texmf-dist/tex/latex/pdftex-def/pdftex.def
43 File: pdftex.def 2011/05/27 v0.06d Graphics/color for pdfTeX
44 (c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/infwarerr.sty
45 Package: infwarerr 2010/04/08 v1.3 Providing info/warning/error messages
46 (HO)
47 ) (c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/ltxcmds.sty
48 Package: ltxcmds 2011/11/09 v1.22 LaTeX kernel commands for general use
49 (HO)
50 )
51 \Gread@gobject=\count87
52 )
53 Package xcolor Info: Model `cmy' substituted by `cmy0' on input line
54 1337.
55 Package xcolor Info: Model `hsb' substituted by `rgb' on input line 1341.
56 Package xcolor Info: Model `RGB' extended on input line 1353.
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4 Package xcolor Info: Model `HTML' substituted by `rgb' on input line
5 1355.
6 Package xcolor Info: Model `Hsb' substituted by `hsb' on input line 1356.
7 Package xcolor Info: Model `tHsb' substituted by `hsb' on input line
8 1357.
9 Package xcolor Info: Model `HSB' substituted by `hsb' on input line 1358.
10 Package xcolor Info: Model `Gray' substituted by `gray' on input line
11 1359.
12 Package xcolor Info: Model `wave' substituted by `hsb' on input line
13 1360.
14 ) (c:/TeXLive/2015/texmf-dist/tex/latex/lastpage/lastpage.sty
15 Package: lastpage 2015/03/29 v1.2m Refers to last page's name (HMM; JPG)
16 )
17 \c@thanks=\count88
18 \bmcfloat@box=\box26
19 \c@author=\count89
20 \c@address=\count90
21 \sv@mathsurround=\dimen104
22 \fm@box=\box27
23 \c@addressref=\count91
24 \thanks@box=\box28
25 \abstract@box=\box29
26 \authors@list=\toks15
27 \keywords@list=\toks16
28 ) (c:/TeXLive/2015/texmf-dist/tex/latex/appendix/appendix.sty
29 Package: appendix 2009/09/02 v1.2b extra appendix facilities
30 \c@@pps=\count92
31 \c@@ppsavesec=\count93
32 \c@@ppsaveapp=\count94
33 ) (c:/TeXLive/2015/texmf-dist/tex/latex/amscs/amsthm.sty
34 Package: amsthm 2015/03/04 v2.20.2
35 \thm@style=\toks17
36 \thm@bodyfont=\toks18
37 \thm@headfont=\toks19
38 \thm@notefont=\toks20
39 \thm@headpunct=\toks21
40 \thm@preskip=\skip43
41 \thm@postskip=\skip44
42 \thm@headsep=\skip45
43 \dth@everypar=\toks22
44 ) (c:/TeXLive/2015/texmf-dist/tex/latex/amsmath/amsmath.sty
45 Package: amsmath 2013/01/14 v2.14 AMS math features
46 \@mathmargin=\skip46
47 For additional information on amsmath, use the `?' option.
48 (c:/TeXLive/2015/texmf-dist/tex/latex/amsmath/amstext.sty
49 Package: amstext 2000/06/29 v2.01
50 (c:/TeXLive/2015/texmf-dist/tex/latex/amsmath/amsgen.sty
51 File: amsgen.sty 1999/11/30 v2.0
52 \@emptytoks=\toks23
53 \ex@=\dimen105
54 )) (c:/TeXLive/2015/texmf-dist/tex/latex/amsmath/amsbsy.sty
55 Package: amsbsy 1999/11/29 v1.2d
56 \pmbraise@=\dimen106
57 ) (c:/TeXLive/2015/texmf-dist/tex/latex/amsmath/amsopn.sty
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4 Package: amsopn 1999/12/14 v2.01 operator names
5 )
6 \inf@bad=\count95
7 LaTeX Info: Redefining \frac on input line 210.
8 \uproot@=\count96
9 \leftroot@=\count97
10 LaTeX Info: Redefining \overline on input line 306.
11 \classnum@=\count98
12 \DOTSCASE@=\count99
13 LaTeX Info: Redefining \ldots on input line 378.
14 LaTeX Info: Redefining \dots on input line 381.
15 LaTeX Info: Redefining \cdots on input line 466.
16 \Mathstrutbox@=\box30
17 \strutbox@=\box31
18 \big@size=\dimen107
19 LaTeX Font Info: Redefining font encoding OML on input line 566.
20 LaTeX Font Info: Redefining font encoding OMS on input line 567.
21 \macc@depth=\count100
22 \c@MaxMatrixCols=\count101
23 \dotsspace@=\muskip10
24 \c@parentequation=\count102
25 \dspbrk@lvl=\count103
26 \tag@help=\toks24
27 \row@=\count104
28 \column@=\count105
29 \maxfields@=\count106
30 \andhelp@=\toks25
31 \eqnshift@=\dimen108
32 \alignsep@=\dimen109
33 \tagshift@=\dimen110
34 \tagwidth@=\dimen111
35 \totwidth@=\dimen112
36 \lineht@=\dimen113
37 \@envbody=\toks26
38 \multlinegap=\skip47
39 \multlinetaggap=\skip48
40 \mathdisplay@stack=\toks27
41 LaTeX Info: Redefining \[ on input line 2665.
42 LaTeX Info: Redefining \] on input line 2666.
43 ) (c:/TeXLive/2015/texmf-dist/tex/latex/ucs/ucs.sty
44 Package: ucs 2013/05/11 v2.2 UCS: Unicode input support
45 (c:/TeXLive/2015/texmf-dist/tex/latex/ucs/data/uni-global.def
46 File: uni-global.def 2013/05/13 UCS: Unicode global data
47 )
48 \uc@secondtry=\count107
49 \uc@combtoks=\toks28
50 \uc@combtoksb=\toks29
51 \uc@temptokena=\toks30
52 ) (c:/TeXLive/2015/texmf-dist/tex/latex/base/inputenc.sty
53 Package: inputenc 2015/03/17 v1.2c Input encoding file
54 \inpenc@prehook=\toks31
55 \inpenc@posthook=\toks32
56 (c:/TeXLive/2015/texmf-dist/tex/latex/ucs/utf8x.def
57 File: utf8x.def 2004/10/17 UCS: Input encoding UTF-8
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4 )) (c:/TeXLive/2015/texmf-dist/tex/latex/algorithms/algorithm.sty
5 Package: algorithm 2009/08/24 v0.1 Document Style `algorithm' - floating
6 enviro
7 nment
8 (c:/TeXLive/2015/texmf-dist/tex/latex/float/float.sty
9 Package: float 2001/11/08 v1.3d Float enhancements (AL)
10 \c@float@type=\count108
11 \float@exts=\toks33
12 \float@box=\box32
13 \@float@everytoks=\toks34
14 \@floatcapt=\box33
15 ) (c:/TeXLive/2015/texmf-dist/tex/latex/base/ifthen.sty
16 Package: ifthen 2014/09/29 v1.1c Standard LaTeX ifthen package (DPC)
17 )
18 \@float@every@algorithm=\toks35
19 \c@algorithm=\count109
20 ) (c:/TeXLive/2015/texmf-dist/tex/latex/algorithms/algorithmic.sty
21 Package: algorithmic 2009/08/24 v0.1 Document Style `algorithmic'
22 \c@ALC@unique=\count110
23 \c@ALC@line=\count111
24 \c@ALC@rem=\count112
25 \c@ALC@depth=\count113
26 \ALC@tlm=\skip49
27 \algorithmicindent=\skip50
28 ) (c:/TeXLive/2015/texmf-dist/tex/latex/natbib/natbib.sty
29 Package: natbib 2010/09/13 8.31b (PWD, AO)
30 \bibhang=\skip51
31 \bibsep=\skip52
32 LaTeX Info: Redefining \cite on input line 694.
33 \c@NAT@ctr=\count114
34 ) (c:/TeXLive/2015/texmf-dist/tex/latex/supertabular/supertabular.sty
35 Package: supertabular 2004/02/20 v4.1e the supertabular environment
36 \c@tracingst=\count115
37 \ST@wd=\dimen114
38 \ST@rightskip=\skip53
39 \ST@leftskip=\skip54
40 \ST@parfillskip=\skip55
41 \ST@pageleft=\dimen115
42 \ST@headht=\dimen116
43 \ST@tailht=\dimen117
44 \ST@pagesofar=\dimen118
45 \ST@pboxht=\dimen119
46 \ST@lineht=\dimen120
47 \ST@stretchht=\dimen121
48 \ST@prevht=\dimen122
49 \ST@toadd=\dimen123
50 \ST@dimen=\dimen124
51 \ST@pbox=\box34
52 ) (c:/TeXLive/2015/texmf-dist/tex/latex/fancybox/fancybox.sty
53 Package: fancybox 2010/05/15 1.4
54 Style option: `fancybox' v1.4 <2010/05/15> (tvz)
55 \@fancybox=\box35
56 \shadowsize=\dimen125
57 \@Sbox=\box36
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4 \do@VerbBox=\toks36
5 \the@fancyput=\toks37
6 \this@fancyput=\toks38
7 \EndVerbatimTokens=\toks39
8 \Verbatim@Outfile=\write3
9 \Verbatim@Infile=\read1
10 ) (c:/TeXLive/2015/texmf-dist/tex/latex/acronym/acronym.sty
11 Package: acronym 2015/03/21 v1.41 Support for acronyms (Tobias Oetiker)
12 (c:/TeXLive/2015/texmf-dist/tex/latex/bigfoot/suffix.sty
13 Package: suffix 2006/07/15 1.5a Variant command support
14 ) (c:/TeXLive/2015/texmf-dist/tex/generic/xstring/xstring.sty
15 (c:/TeXLive/2015/
16 texmf-dist/tex/generic/xstring/xstring.tex
17 \@xs@message=\write4
18 \integerpart=\count116
19 \decimalpart=\count117
20 )
21 Package: xstring 2013/10/13 v1.7c String manipulations (C Tellechea)
22 )
23 \AC@clearlist=\toks40
24 ) (c:/TeXLive/2015/texmf-dist/tex/latex/tools/array.sty
25 Package: array 2014/10/28 v2.4c Tabular extension package (FMI)
26 \col@sep=\dimen126
27 \extrarowheight=\dimen127
28 \NC@list=\toks41
29 \extratabsurround=\skip56
30 \backup@length=\skip57
31 ) (c:/TeXLive/2015/texmf-dist/tex/latex/booktabs/booktabs.sty
32 Package: booktabs 2005/04/14 v1.61803 publication quality tables
33 \heavyrulewidth=\dimen128
34 \lightrulewidth=\dimen129
35 \cmidrulewidth=\dimen130
36 \belowrulesep=\dimen131
37 \belowbottomsep=\dimen132
38 \aboverulesep=\dimen133
39 \abovetopsep=\dimen134
40 \cmidrulesep=\dimen135
41 \cmidrulekern=\dimen136
42 \defaultaddspace=\dimen137
43 \@cmidla=\count118
44 \@cmidlb=\count119
45 \@aboverulesep=\dimen138
46 \@belowrulesep=\dimen139
47 \@thisruleclass=\count120
48 \@lastruleclass=\count121
49 \@thisrulewidth=\dimen140
50 ) (c:/TeXLive/2015/texmf-dist/tex/latex/graphics/graphicx.sty
51 Package: graphicx 2014/10/28 v1.0g Enhanced LaTeX Graphics (DPC,SPQR)
52 (c:/TeXLive/2015/texmf-dist/tex/latex/graphics/graphics.sty
53 Package: graphics 2014/10/28 v1.0p Standard LaTeX Graphics (DPC,SPQR)
54 (c:/TeXLive/2015/texmf-dist/tex/latex/graphics/trig.sty
55 Package: trig 1999/03/16 v1.09 sin cos tan (DPC)
56 ) (c:/TeXLive/2015/texmf-dist/tex/latex/latexconfig/graphics.cfg
57 File: graphics.cfg 2010/04/23 v1.9 graphics configuration of TeX Live
58
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)
Package graphics Info: Driver file: pdftex.def on input line 94.
)
\Gin@req@height=\dimen141
\Gin@req@width=\dimen142
) (c:/TeXLive/2015/texmf-dist/tex/latex/rotating/rotating.sty
Package: rotating 2009/03/28 v2.16a rotated objects in LaTeX
\c@r@tfl@t=\count122
\rotFPtop=\skip58
\rotFPbot=\skip59
\rot@float@box=\box37
\rot@mess@toks=\toks42
) (c:/TeXLive/2015/texmf-dist/tex/latex/tools/tabularx.sty
Package: tabularx 2014/10/28 v2.10 `tabularx' package (DPC)
\TX@col@width=\dimen143
\TX@old@table=\dimen144
\TX@old@col=\dimen145
\TX@target=\dimen146
\TX@delta=\dimen147
\TX@cols=\count123
\TX@ftn=\toks43
) (c:/TeXLive/2015/texmf-dist/tex/latex/colortbl/colortbl.sty
Package: colortbl 2012/02/13 v1.0a Color table columns (DPC)
\everycr=\toks44
\minrowclearance=\skip60
) (c:/TeXLive/2015/texmf-dist/tex/latex/multirow/multirow.sty
\bigstrutjot=\dimen148
) (c:/TeXLive/2015/texmf-dist/tex/latex/tools/hhline.sty
Package: hhline 2014/10/28 v2.03 Table rule package (DPC)
) (c:/TeXLive/2015/texmf-dist/tex/latex/setspace/setspace.sty
Package: setspace 2011/12/19 v6.7a set line spacing
) (c:/TeXLive/2015/texmf-dist/tex/latex/placeins/placeins.sty
Package: placeins 2005/04/18 v 2.2
) (c:/TeXLive/2015/texmf-dist/tex/latex/tools/longtable.sty
Package: longtable 2014/10/28 v4.11 Multi-page Table package (DPC)
\LTleft=\skip61
\LTRight=\skip62
\LTpre=\skip63
\LTpost=\skip64
\LTchunksize=\count124
\LTcapwidth=\dimen149
\LT@head=\box38
\LT@firsthead=\box39
\LT@foot=\box40
\LT@lastfoot=\box41
\LT@cols=\count125
\LT@rows=\count126
\c@LT@tables=\count127
\c@LT@chunks=\count128
\LT@p@ftn=\toks45
) (c:/TeXLive/2015/texmf-dist/tex/latex/mathtools/mathtools.sty
Package: mathtools 2015/06/17 v1.17 mathematical typesetting tools
(c:/TeXLive/2015/texmf-dist/tex/latex/tools/calc.sty
Package: calc 2014/10/28 v4.3 Infix arithmetic (KKT,FJ)

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1
2
3
4 \calc@Acount=\count129
5 \calc@Bcount=\count130
6 \calc@Adimen=\dimen150
7 \calc@Bdimen=\dimen151
8 \calc@Askip=\skip65
9 \calc@Bskip=\skip66
10 LaTeX Info: Redefining \setlength on input line 80.
11 LaTeX Info: Redefining \addtolength on input line 81.
12 \calc@Ccount=\count131
13 \calc@Cskip=\skip67
14 ) (c:/TeXLive/2015/texmf-dist/tex/latex/mathtools/mhsetup.sty
15 Package: mhsetup 2010/01/21 v1.2a programming setup (MH)
16 )
17 LaTeX Info: Thecontrolsequence`\'isalreadyrobust on input line 129.
18 LaTeX Info: Thecontrolsequence`\'isalreadyrobust on input line 129.
19 LaTeX Info: Thecontrolsequence`\'isalreadyrobust on input line 129.
20 LaTeX Info: Thecontrolsequence`\'isalreadyrobust on input line 129.
21 \g_MT_multlinetext_int=\count132
22 \l_MT_multwidth_dim=\dimen152
23 \origjot=\skip68
24 \l_MT_shortvdotswithinadjustabove_dim=\dimen153
25 \l_MT_shortvdotswithinadjustbelow_dim=\dimen154
26 \l_MT_above_intertext_sep=\dimen155
27 \l_MT_below_intertext_sep=\dimen156
28 \l_MT_above_shortintertext_sep=\dimen157
29 \l_MT_below_shortintertext_sep=\dimen158
30 ) (c:/TeXLive/2015/texmf-dist/tex/latex/listings/listings.sty
31 \lst@mode=\count133
32 \lst@gtempboxa=\box42
33 \lst@token=\toks46
34 \lst@length=\count134
35 \lst@currlwidth=\dimen159
36 \lst@column=\count135
37 \lst@pos=\count136
38 \lst@lostspace=\dimen160
39 \lst@width=\dimen161
40 \lst@newlines=\count137
41 \lst@lineno=\count138
42 \lst@maxwidth=\dimen162
43 (c:/TeXLive/2015/texmf-dist/tex/latex/listings/lstmisc.sty
44 File: lstmisc.sty 2015/06/04 1.6 (Carsten Heinz)
45 \c@lstnumber=\count139
46 \lst@skipnumbers=\count140
47 \lst@framebox=\box43
48 ) (c:/TeXLive/2015/texmf-dist/tex/latex/listings/listings.cfg
49 File: listings.cfg 2015/06/04 1.6 listings configuration
50 ))
51 Package: listings 2015/06/04 1.6 (Carsten Heinz)
52 (c:/TeXLive/2015/texmf-dist/tex/latex/oberdiek/epstopdf.sty
53 Package: epstopdf 2010/02/09 v2.5 Conversion with epstopdf on the fly
54 (HO)
55 (c:/TeXLive/2015/texmf-dist/tex/latex/oberdiek/epstopdf-base.sty
56 Package: epstopdf-base 2010/02/09 v2.5 Base part for package epstopdf
57 (c:/TeXLive/2015/texmf-dist/tex/latex/oberdiek/grfext.sty
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4 Package: grfext 2010/08/19 v1.1 Manage graphics extensions (HO)
5 (c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/kvdefinekeys.sty
6 Package: kvdefinekeys 2011/04/07 v1.3 Define keys (HO)
7 )) (c:/TeXLive/2015/texmf-dist/tex/latex/oberdiek/kvoptions.sty
8 Package: kvoptions 2011/06/30 v3.11 Key value format for package options
9 (HO)
10 (c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/kvsetkeys.sty
11 Package: kvsetkeys 2012/04/25 v1.16 Key value parser (HO)
12 (c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/etexcmds.sty
13 Package: etexcmds 2011/02/16 v1.5 Avoid name clashes with e-TeX commands
14 (HO)
15 (c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/ifluatex.sty
16 Package: ifluatex 2010/03/01 v1.3 Provides the ifluatex switch (HO)
17 Package ifluatex Info: LuaTeX not detected.
18 )
19 Package etexcmds Info: Could not find \expanded.
20 (etexcmds) That can mean that you are not using pdfTeX 1.50
21 or
22 (etexcmds) that some package has redefined \expanded.
23 (etexcmds) In the latter case, load this package earlier.
24 ))) (c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/pdfdoccmds.sty
25 Package: pdfdoccmds 2011/11/29 v0.20 Utility functions of pdfTeX for
26 LuaTeX (HO
27 )
28 (c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/ifpdf.sty
29 Package: ifpdf 2011/01/30 v2.3 Provides the ifpdf switch (HO)
30 Package ifpdf Info: pdfTeX in PDF mode is detected.
31 )
32 Package pdfdoccmds Info: LuaTeX not detected.
33 Package pdfdoccmds Info: \pdf@primitive is available.
34 Package pdfdoccmds Info: \pdf@ifprimitive is available.
35 Package pdfdoccmds Info: \pdfdraftmode found.
36 )
37 Package grfext Info: Graphics extension search list:
38 (grfext)
39 [.png,.pdf,.jpg,.mps,.jpeg,.jbig2,.jb2,.PNG,.PDF,.JPG,.JPE
40 G,.JBIG2,.JB2,.eps]
41 (grfext) \AppendGraphicsExtensions on input line 452.
42 (c:/TeXLive/2015/texmf-dist/tex/latex/latexconfig/epstopdf-sys.cfg
43 File: epstopdf-sys.cfg 2010/07/13 v1.3 Configuration of (r)epstopdf for
44 TeX Liv
45 e
46 ))) (c:/TeXLive/2015/texmf-dist/tex/latex/subfigure/subfigure.sty
47 Package: subfigure 2002/03/15 v2.1.5 subfigure package
48 \subfigtopskip=\skip69
49 \subfigcapskip=\skip70
50 \subfigcaptopadj=\dimen163
51 \subfigbottomskip=\skip71
52 \subfigcapmargin=\dimen164
53 \subfiglabelskip=\skip72
54 \c@subfigure=\count141
55 \c@lofdepth=\count142
56 \c@subtable=\count143
57 \c@lotdepth=\count144
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*****
* Local config file subfigure.cfg used *
*****
(c:/TeXLive/2015/texmf-dist/tex/latex/subfigure/subfigure.cfg)
\subfig@top=\skip73
\subfig@bottom=\skip74
) (c:/TeXLive/2015/texmf-dist/tex/latex/psnfss/courier.sty
Package: courier 2005/04/12 PSNFSS-v9.2a (WaS)
) (c:/TeXLive/2015/texmf-dist/tex/latex/amsfonts/amsfonts.sty
Package: amsfonts 2013/01/14 v3.01 Basic AMSFonts support
\symAMSa=\mathgroup4
\symAMSb=\mathgroup5
LaTeX Font Info: Overwriting math alphabet '\mathfrak' in version
'bold'
(Font) U/euf/m/n --> U/euf/b/n on input line 106.
) (c:/TeXLive/2015/texmf-dist/tex/latex/morefloats/morefloats.sty
Package: morefloats 2015/07/22 v1.0h Raise limit of unprocessed floats
(HMM)
Package morefloats Info: Maximum number of possible floats asked for: 36
(morefloats) (i.e. 18 more floats).
(morefloats) LaTeX might run out of memory before this
(morefloats) (in which case it will notify you).
) (c:/TeXLive/2015/texmf-dist/tex/latex/lipsum/lipsum.sty
Package: lipsum 2014/07/27 v1.3 150 paragraphs of Lorem Ipsum dummy text
\c@lips@count=\count145
) (c:/TeXLive/2015/texmf-dist/tex/latex/hyperref/hyperref.sty
Package: hyperref 2012/11/06 v6.83m Hypertext links for LaTeX
(c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/hobsub-hyperref.sty
Package: hobsub-hyperref 2012/05/28 v1.13 Bundle oberdiek, subset
hyperref (HO)

(c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/hobsub-generic.sty
Package: hobsub-generic 2012/05/28 v1.13 Bundle oberdiek, subset generic
(HO)
Package: hobsub 2012/05/28 v1.13 Construct package bundles (HO)
Package hobsub Info: Skipping package 'infwarerr' (already loaded).
Package hobsub Info: Skipping package 'ltxcmds' (already loaded).
Package hobsub Info: Skipping package 'ifluatex' (already loaded).
Package: ifvtex 2010/03/01 v1.5 Detect VTeX and its facilities (HO)
Package ifvtex Info: VTeX not detected.
Package: intcalc 2007/09/27 v1.1 Expandable calculations with integers
(HO)
Package hobsub Info: Skipping package 'ifpdf' (already loaded).
Package hobsub Info: Skipping package 'etexcmds' (already loaded).
Package hobsub Info: Skipping package 'kvsetkeys' (already loaded).
Package hobsub Info: Skipping package 'kvdefinekeys' (already loaded).
Package hobsub Info: Skipping package 'pdftexcmds' (already loaded).
Package: pdfescape 2011/11/25 v1.13 Implements pdfTeX's escape features
(HO)
Package: bigintcalc 2012/04/08 v1.3 Expandable calculations on big
integers (HO)
)
Package: bitset 2011/01/30 v1.1 Handle bit-vector datatype (HO)

```

```

1
2
3
4 Package: uniquecounter 2011/01/30 v1.2 Provide unlimited unique counter
5 (HO)
6 )
7 Package hobsub Info: Skipping package `hobsub' (already loaded).
8 Package: letltxmacro 2010/09/02 v1.4 Let assignment for LaTeX macros (HO)
9 Package: hopatch 2012/05/28 v1.2 Wrapper for package hooks (HO)
10 Package: xcolor-patch 2011/01/30 xcolor patch
11 Package: atveryend 2011/06/30 v1.8 Hooks at the very end of document (HO)
12 Package atveryend Info: \enddocument detected (standard20110627).
13 Package: atbegshi 2011/10/05 v1.16 At begin shipout hook (HO)
14 Package: refcount 2011/10/16 v3.4 Data extraction from label references
15 (HO)
16 Package: hycolor 2011/01/30 v1.7 Color options for hyperref/bookmark (HO)
17 ) (c:/TeXLive/2015/texmf-dist/tex/generic/ifxetex/ifxetex.sty
18 Package: ifxetex 2010/09/12 v0.6 Provides ifxetex conditional
19 ) (c:/TeXLive/2015/texmf-dist/tex/latex/oberdiek/auxhook.sty
20 Package: auxhook 2011/03/04 v1.3 Hooks for auxiliary files (HO)
21 )
22 \@linkdim=\dimen165
23 \Hy@linkcounter=\count146
24 \Hy@pagecounter=\count147
25 (c:/TeXLive/2015/texmf-dist/tex/latex/hyperref/pd1enc.def
26 File: pd1enc.def 2012/11/06 v6.83m Hyperref: PDFDocEncoding definition
27 (HO)
28 )
29 \Hy@SavedSpaceFactor=\count148
30 (c:/TeXLive/2015/texmf-dist/tex/latex/latexconfig/hyperref.cfg
31 File: hyperref.cfg 2002/06/06 v1.2 hyperref configuration of TeXLive
32 )
33 Package hyperref Info: Option `colorlinks' set `true' on input line 4319.
34
35 Package hyperref Warning: Option `pagecolor' is not available anymore.
36
37 Package hyperref Info: Hyper figures OFF on input line 4443.
38 Package hyperref Info: Link nesting OFF on input line 4448.
39 Package hyperref Info: Hyper index ON on input line 4451.
40 Package hyperref Info: Plain pages OFF on input line 4458.
41 Package hyperref Info: Backreferencing OFF on input line 4463.
42 Package hyperref Info: Implicit mode ON; LaTeX internals redefined.
43 Package hyperref Info: Bookmarks ON on input line 4688.
44 \c@Hy@tempcnt=\count149
45 (c:/TeXLive/2015/texmf-dist/tex/latex/url/url.sty
46 \Urlmuskip=\muskip11
47 Package: url 2013/09/16 ver 3.4 Verb mode for urls, etc.
48 )
49 LaTeX Info: Redefining \url on input line 5041.
50 \XeTeXLinkMargin=\dimen166
51 \Fld@menulength=\count150
52 \Field@Width=\dimen167
53 \Fld@charsize=\dimen168
54 Package hyperref Info: Hyper figures OFF on input line 6295.
55 Package hyperref Info: Link nesting OFF on input line 6300.
56 Package hyperref Info: Hyper index ON on input line 6303.
57 Package hyperref Info: backreferencing OFF on input line 6310.
58
59
60
61
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```

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1
2
3
4 Package hyperref Info: Link coloring ON on input line 6313.
5 Package hyperref Info: Link coloring with OCG OFF on input line 6320.
6 Package hyperref Info: PDF/A mode OFF on input line 6325.
7 LaTeX Info: Redefining \ref on input line 6365.
8 LaTeX Info: Redefining \pageref on input line 6369.
9 \Hy@abspage=\count151
10 \c@Item=\count152
11 \c@Hfootnote=\count153
12 )
13
14
15 Package hyperref Message: Driver (autodetected): hpdftex.
16
17 (c:/TeXLive/2015/texmf-dist/tex/latex/hyperref/hpdftex.def
18 File: hpdftex.def 2012/11/06 v6.83m Hyperref driver for pdfTeX
19 \Fld@listcount=\count154
20 \c@bookmark@seq@number=\count155
21 (c:/TeXLive/2015/texmf-dist/tex/latex/oberdiek/rerunfilecheck.sty
22 Package: rerunfilecheck 2011/04/15 v1.7 Rerun checks for auxiliary files
23 (HO)
24 Package uniquecounter Info: New unique counter `rerunfilecheck' on input
25 line 2
26 82.
27 )
28 \Hy@SectionHShift=\skip75
29 ) (c:/TeXLive/2015/texmf-dist/tex/latex/cleveref/cleveref.sty
30 Package: cleveref 2013/12/28 v0.19 Intelligent cross-referencing
31 Package cleveref Info: `hyperref' support loaded on input line 2230.
32 LaTeX Info: Redefining \cref on input line 2230.
33 LaTeX Info: Redefining \Cref on input line 2230.
34 LaTeX Info: Redefining \crefrange on input line 2230.
35 LaTeX Info: Redefining \Crefrange on input line 2230.
36 LaTeX Info: Redefining \cpageref on input line 2230.
37 LaTeX Info: Redefining \Cpageref on input line 2230.
38 LaTeX Info: Redefining \cpagerefrange on input line 2230.
39 LaTeX Info: Redefining \Cpagerefrange on input line 2230.
40 LaTeX Info: Redefining \labelcref on input line 2230.
41 LaTeX Info: Redefining \labelcpageref on input line 2230.
42 Package cleveref Info: `amsthm' support loaded on input line 2858.
43 Package cleveref Info: `listings' support loaded on input line 2950.
44 ) (./2014eurasip.aux)
45 \openout1 = `2014eurasip.aux'.
46
47
48 LaTeX Font Info: Checking defaults for OML/cmm/m/it on input line 135.
49 LaTeX Font Info: ... okay on input line 135.
50 LaTeX Font Info: Checking defaults for T1/cmr/m/n on input line 135.
51 LaTeX Font Info: ... okay on input line 135.
52 LaTeX Font Info: Checking defaults for OT1/cmr/m/n on input line 135.
53 LaTeX Font Info: ... okay on input line 135.
54 LaTeX Font Info: Checking defaults for OMS/cmsy/m/n on input line 135.
55 LaTeX Font Info: ... okay on input line 135.
56 LaTeX Font Info: Checking defaults for OMX/cmex/m/n on input line 135.
57 LaTeX Font Info: ... okay on input line 135.
58 LaTeX Font Info: Checking defaults for U/cmr/m/n on input line 135.
59 LaTeX Font Info: ... okay on input line 135.
60
61
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```

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1
2
3
4 LaTeX Font Info: Checking defaults for PD1/pdf/m/n on input line 135.
5 LaTeX Font Info: ... okay on input line 135.
6 (c:/TeXLive/2015/texmf-dist/tex/context/base/supp-pdf.mkii
7 [Loading MPS to PDF converter (version 2006.09.02).]
8 \scratchcounter=\count156
9 \scratchdimen=\dimen169
10 \scratchbox=\box44
11 \nofMPsegments=\count157
12 \nofMParguments=\count158
13 \everyMPshowfont=\toks47
14 \MPscratchCnt=\count159
15 \MPscratchDim=\dimen170
16 \MPnumerator=\count160
17 \makeMPintoPDFobject=\count161
18 \everyMPtoPDFconversion=\toks48
19 )
20
21 Package lastpage Info: Please have a look at the pageslts package at
22 (lastpage) https://www.ctan.org/pkg/pageslts
23 (lastpage) ! on input line 135.
24
25 Package hyperref Warning: Token not allowed in a PDF string
26 (PDFDocEncoding):
27 (hyperref) removing '\begingroup' on input line 135.
28
29
30 Package hyperref Warning: Token not allowed in a PDF string
31 (PDFDocEncoding):
32 (hyperref) removing '\<let>-command' on input line 135.
33
34
35 Package hyperref Warning: Token not allowed in a PDF string
36 (PDFDocEncoding):
37 (hyperref) removing '\endgroup' on input line 135.
38
39
40 Package hyperref Warning: Token not allowed in a PDF string
41 (PDFDocEncoding):
42 (hyperref) removing '\new@ifnextchar' on input line 135.
43
44
45 Package hyperref Warning: Token not allowed in a PDF string
46 (PDFDocEncoding):
47 (hyperref) removing '\begingroup' on input line 135.
48
49
50 Package hyperref Warning: Token not allowed in a PDF string
51 (PDFDocEncoding):
52 (hyperref) removing '\<let>-command' on input line 135.
53
54
55 Package hyperref Warning: Token not allowed in a PDF string
56 (PDFDocEncoding):
57 (hyperref) removing '\utf@viii@undeferr' on input line
58 135.
59
60
61
62
63
64
65

```

```

1
2
3
4
5
6 Package hyperref Warning: Token not allowed in a PDF string
7 (PDFDocEncoding):
8 (hyperref) removing '\endgroup' on input line 135.
9
10 (c:/TeXLive/2015/texmf-dist/tex/latex/ucs/ucsencs.def
11 File: ucsencs.def 2011/01/21 Fixes to fontencodings LGR, T3
12 )
13 \c@lstlisting=\count162
14 \AtBeginShipoutBox=\box45
15 Package hyperref Info: Link coloring ON on input line 135.
16 (c:/TeXLive/2015/texmf-dist/tex/latex/hyperref/nameref.sty
17 Package: nameref 2012/10/27 v2.43 Cross-referencing by name of section
18 (c:/TeXLive/2015/texmf-dist/tex/generic/oberdiek/gettitlestring.sty
19 Package: gettitlestring 2010/12/03 v1.4 Cleanup title references (HO)
20 )
21 \c@section@level=\count163
22 )
23 LaTeX Info: Redefining \ref on input line 135.
24 LaTeX Info: Redefining \pageref on input line 135.
25 LaTeX Info: Redefining \nameref on input line 135.
26 (./2014eurasip.out) (./2014eurasip.out)
27 \@outlinefile=\write5
28 \openout5 = `2014eurasip.out'.
29
30
31
32 LaTeX Font Warning: Font shape `OT1/cmss/bx/n' in size <13> not available
33 (Font) size <12> substituted on input line 142.
34
35
36 LaTeX Font Warning: Font shape `OT1/cmss/m/n' in size <24> not available
37 (Font) size <24.88> substituted on input line 150.
38
39 LaTeX Font Info: Calculating math sizes for size <11> on input line
40 171.
41
42 LaTeX Font Warning: Font shape `OT1/cmr/m/n' in size <5.5> not available
43 (Font) size <5> substituted on input line 171.
44
45
46 LaTeX Font Warning: Font shape `OML/cmm/m/it' in size <5.5> not available
47 (Font) size <5> substituted on input line 171.
48
49
50 LaTeX Font Warning: Font shape `OMS/cmsy/m/n' in size <5.5> not available
51 (Font) size <5> substituted on input line 171.
52
53 LaTeX Font Info: Try loading font information for U+msa on input line
54 171.
55 (c:/TeXLive/2015/texmf-dist/tex/latex/amsfonts/umsa.fd
56 File: umsa.fd 2013/01/14 v3.01 AMS symbols A
57 )
58
59
60
61
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63
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```

LaTeX Font Info: Try loading font information for U+msb on input line 171.  
(c:/TeXLive/2015/texmf-dist/tex/latex/amsfonts/umsb.fd  
File: umsb.fd 2013/01/14 v3.01 AMS symbols B  
)

LaTeX Warning: Reference `address1thanks' on page 1 undefined on input line 171

.

(c:/TeXLive/2015/texmf-dist/tex/latex/ucs/data/uni-0.def  
File: uni-0.def 2013/05/13 UCS: Unicode data U+0000..U+00FF  
)

LaTeX Warning: Reference `address1thanks' on page 1 undefined on input line 175

.

LaTeX Warning: Reference `address1thanks' on page 1 undefined on input line 179

.

LaTeX Warning: Reference `address1thanks' on page 1 undefined on input line 183

.

LaTeX Warning: Reference `address2thanks' on page 1 undefined on input line 183

.

LaTeX Warning: Reference `address1thanks' on page 1 undefined on input line 192

.

\address@address1=\toks49  
\address@address2=\toks50

LaTeX Warning: Reference `address1thanks' on page 1 undefined on input line 239

.

Package natbib Warning: Citation `lakhina2005mining' on page 1 undefined on input line 317.

Package natbib Warning: Citation `Lu2009' on page 1 undefined on input line 317

.

Package natbib Warning: Citation `Huang2009' on page 1 undefined on input line 317.

Package natbib Warning: Citation `Zonglin2009' on page 1 undefined on input line 317.

Package natbib Warning: Citation `david2011blind' on page 1 undefined on input line 317.

Package natbib Warning: Citation `da2012improved' on page 1 undefined on input line 317.

Package natbib Warning: Citation `tenorio2013greatest' on page 1 undefined on input line 317.

Package natbib Warning: Citation `Huang2009' on page 1 undefined on input line 319.

Package natbib Warning: Citation `mudzingwa2012study' on page 1 undefined on input line 319.

Package natbib Warning: Citation `david2011blind' on page 1 undefined on input line 321.

Package natbib Warning: Citation `da2012improved' on page 1 undefined on input line 321.

Package natbib Warning: Citation `david2011blind' on page 1 undefined on input line 321.

Package natbib Warning: Citation `da2012improved' on page 1 undefined on input



line 321.

Package natbib Warning: Citation `tenorio2013greatest' on page 1  
undefined on input line 321.

LaTeX Font Warning: Font shape `OT1/cmss/m/it' in size <8> not available  
(Font) Font shape `OT1/cmss/m/sl' tried instead on input  
line 322.

Overfull \hbox (1.0pt too wide) has occurred while \output is active  
[]  
[]

```
[1{c:/TeXLive/2015/texmf-var/fonts/map/pdftex/updmap/pdftex.map}
]
```

Package natbib Warning: Citation `he2008applying' on page 2 undefined on  
input line 331.

Package natbib Warning: Citation `ghourabi2010data' on page 2 undefined  
on input line 331.

Package natbib Warning: Citation `raynal2004honeypot' on page 2 undefined  
on input line 331.

Package natbib Warning: Citation `he2008applying' on page 2 undefined on  
input line 333.

Package natbib Warning: Citation `ghourabi2010data' on page 2 undefined  
on input line 333.

Package natbib Warning: Citation `Huang2009' on page 2 undefined on input  
line 333.

Package natbib Warning: Citation `raynal2004honeypot' on page 2 undefined  
on input

put line 335.

Package natbib Warning: Citation `almotairi2009technique' on page 2  
undefined on  
input line 337.

[2]

Package natbib Warning: Citation `Lu2009' on page 3 undefined on input  
line 339

.

Package natbib Warning: Citation `Lu2009' on page 3 undefined on input  
line 339

.

Package natbib Warning: Citation `Zonglin2009' on page 3 undefined on  
input line  
339.

Package natbib Warning: Citation `Zonglin2009' on page 3 undefined on  
input line  
339.

Package natbib Warning: Citation `david2011blind' on page 3 undefined on  
input  
line 341.

Package natbib Warning: Citation `da2012improved' on page 3 undefined on  
input  
line 341.

Package natbib Warning: Citation `zakaria2012review' on page 3 undefined  
on input  
line 341.

Package natbib Warning: Citation `david2011blind' on page 3 undefined on  
input  
line 341.

Package natbib Warning: Citation `david2011blind' on page 3 undefined on  
input  
line 341.

Package natbib Warning: Citation `Lee2013' on page 3 undefined on input  
line 34  
3.

(c:/TeXLive/2015/texmf-dist/tex/latex/ucs/data/uni-3.def  
File: uni-3.def 2013/05/13 UCS: Unicode data U+0300..U+03FF  
) [3]  
LaTeX Font Info: Try loading font information for OT1+pcr on input  
line 372.

(c:/TeXLive/2015/texmf-dist/tex/latex/psnfss/otlpcr.fd  
File: otlpcr.fd 2001/06/04 font definitions for OT1+pcr.  
)  
Underfull \hbox (badness 10000) in paragraph at lines 369--374

[]

Overfull \hbox (1.9984pt too wide) in paragraph at lines 369--374  
\OT1+pcr/m/n/10 21:00:34.099289 IP 192.168.1.102.34712 > 200.221.2.45.80:  
Flags

[]

Underfull \hbox (badness 10000) in paragraph at lines 369--374

[]

Underfull \hbox (badness 10000) in paragraph at lines 375--380

[]

Overfull \hbox (13.9984pt too wide) in paragraph at lines 375--380  
\OT1+pcr/m/n/10 21:24:42.484858 IP 192.168.1.102.68 > 192.168.1.1.67:  
BOOTP/DHC

P,  
[]

Underfull \hbox (badness 10000) in paragraph at lines 375--380

[]

[4] (c:/TeXLive/2015/texmf-dist/tex/latex/ucs/data/uni-34.def  
File: uni-34.def 2013/05/13 UCS: Unicode data U+2200..U+22FF  
) [5] [6]

Package natbib Warning: Citation `jin2004covariance' on page 7 undefined  
on inp  
ut line 470.

Package natbib Warning: Citation `lakhina2005mining' on page 7 undefined on input line 470.

[7]

Package natbib Warning: Citation `tenorio2013greatest' on page 8 undefined on input line 521.

[8]

Package natbib Warning: Citation `tenorio2013greatest' on page 9 undefined on input line 532.

Package hyperref Info: bookmark level for unknown algorithm defaults to 0 on input line 542.

```
> \LOOP=macro:
->\@protected@testopt \LOOP \LOOP {default}.
1.545          \show\LOOP
```

Package natbib Warning: Citation `Lee2013' on page 9 undefined on input line 563.

[9] [10] [11] [12]

LaTeX Font Warning: Font shape `OT1/cmss/bx/it' undefined (Font) using `OT1/cmss/bx/n' instead on input line 715.

[13]

Package natbib Warning: Citation `tenorio2013greatest' on page 14 undefined on input line 734.

Package natbib Warning: Citation `da2009comparison' on page 14 undefined on input line 734.

Package natbib Warning: Citation `tenorio2013greatest' on page 14 undefined on input line 734.

Overfull \hbox (5.9468pt too wide) in paragraph at lines 741--760

[[[

[ ]

[14]

LaTeX Warning: `!h' float specifier changed to `!ht'.

[15]

LaTeX Warning: `!h' float specifier changed to `!ht'.

LaTeX Warning: `!h' float specifier changed to `!ht'.

[16]

Underfull \vbox (badness 1394) has occurred while \output is active [ ]

[17] [18] [19]

Package natbib Warning: Citation `tenorio2013greatest' on page 20  
undefined on  
input line 1034.

Package natbib Warning: Citation `da2009comparison' on page 20 undefined  
on inp  
ut line 1048.

Package natbib Warning: Citation `rajan1997model' on page 20 undefined on  
input  
line 1050.

[20]

Package natbib Warning: Citation `akaike1974new' on page 21 undefined on  
input  
line 1052.

Package natbib Warning: Citation `wax1985detection' on page 21 undefined  
on inp  
ut line 1052.

Package natbib Warning: Citation `barron1998minimum' on page 21 undefined  
on in  
put line 1052.

Package natbib Warning: Citation `wax1985detection' on page 21 undefined  
on inp  
ut line 1052.

Package natbib Warning: Citation `zhao1986detection' on page 21 undefined  
on in  
put line 1052.

Package natbib Warning: Citation `ulfarsson2008rank' on page 21 undefined  
on in  
put line 1052.

Package natbib Warning: Citation `radoi2004new' on page 21 undefined on  
input l  
ine 1052.

Package natbib Warning: Citation `grouffaud1996some' on page 21 undefined  
on in  
put line 1052.

Package natbib Warning: Citation `quinlan2006model' on page 21 undefined  
on inp  
ut line 1052.

Package natbib Warning: Citation `david2011blind' on page 21 undefined on  
input  
line 1052.

Package natbib Warning: Citation `da2009comparison' on page 21 undefined  
on inp  
ut line 1054.

Package natbib Warning: Citation `da2009comparison' on page 21 undefined  
on inp  
ut line 1056.

Package natbib Warning: Citation `grouffaud1996some' on page 21 undefined  
on in  
put line 1087.

Underfull \vbox (badness 1817) has occurred while \output is active []

[21]

Package natbib Warning: Citation `quinlan2006model' on page 22 undefined  
on inp  
ut line 1100.

No file 2014eurasip.bbl.

LaTeX Warning: File `results/figures/fig09.png' not found on input line 1171.

! Package pdftex.def Error: File `results/figures/fig09.png' not found.

See the pdftex.def package documentation for explanation.

Type H <return> for immediate help.

...

1.1171 ...m, width=7cm]{results/figures/fig09.png}

Using draft setting for this image.

Try typing <return> to proceed.

If that doesn't work, type X <return> to quit.

LaTeX Warning: File `results/figures/fig03.png' not found on input line 1178.

! Package pdftex.def Error: File `results/figures/fig03.png' not found.

See the pdftex.def package documentation for explanation.

Type H <return> for immediate help.

...

1.1178 ...m, width=9cm]{results/figures/fig03.png}

Using draft setting for this image.

Try typing <return> to proceed.

If that doesn't work, type X <return> to quit.

LaTeX Warning: File `results/figures/fig04.png' not found on input line 1185.

! Package pdftex.def Error: File `results/figures/fig04.png' not found.

See the pdftex.def package documentation for explanation.

Type H <return> for immediate help.

...

1.1185 ...m, width=9cm]{results/figures/fig04.png}

Using draft setting for this image.

Try typing <return> to proceed.

If that doesn't work, type X <return> to quit.

LaTeX Warning: `!h' float specifier changed to `!ht'.

LaTeX Warning: File `results/figures/fig05.png' not found on input line 1192.

! Package pdftex.def Error: File `results/figures/fig05.png' not found.

See the pdftex.def package documentation for explanation.

Type H <return> for immediate help.

...

l.1192 ...m, width=9cm]{results/figures/fig05.png}

Using draft setting for this image.

Try typing <return> to proceed.

If that doesn't work, type X <return> to quit.

LaTeX Warning: `!h' float specifier changed to `!ht'.

LaTeX Warning: File `results/figures/fig06.png' not found on input line 1199.

! Package pdftex.def Error: File `results/figures/fig06.png' not found.

See the pdftex.def package documentation for explanation.

Type H <return> for immediate help.

...

l.1199 ...m, width=9cm]{results/figures/fig06.png}

Using draft setting for this image.

Try typing <return> to proceed.

If that doesn't work, type X <return> to quit.

(c:/TeXLive/2015/texmf-dist/tex/latex/ucs/data/uni-32.def  
File: uni-32.def 2013/05/13 UCS: Unicode data U+2000..U+20FF  
)

LaTeX Warning: `!h' float specifier changed to `!ht'.

LaTeX Warning: File `results/figures/fig07.png' not found on input line 1206.

! Package pdftex.def Error: File `results/figures/fig07.png' not found.

See the pdftex.def package documentation for explanation.

Type H <return> for immediate help.

...



1.1206 ...m, width=9cm]{results/figures/fig07.png}

Using draft setting for this image.

Try typing <return> to proceed.

If that doesn't work, type X <return> to quit.

LaTeX Warning: `!h' float specifier changed to `!ht'.

LaTeX Warning: File `results/figures/incremental.eps' not found on input  
line 1  
212.

Package epstopdf Info: Source file: <results/figures/incremental.eps>  
(epstopdf) Output file: <results/figures/incremental-eps-  
converted-  
to.pdf>

(epstopdf) Command: <repstopdf --  
outfile=results/figures/incrementa  
l-eps-converted-to.pdf results/figures/incremental.eps>  
(epstopdf) \includegraphics on input line 1212.

Package epstopdf Info: Output file is already uptodate.

! Package pdftex.def Error: File `results/figures/incremental-eps-  
converted-to.  
pdf' not found.

See the pdftex.def package documentation for explanation.

Type H <return> for immediate help.

...

1.1212 ...12.4cm]{results/figures/incremental.eps}

Using draft setting for this image.

Try typing <return> to proceed.

If that doesn't work, type X <return> to quit.

Overfull \hbox (4.41057pt too wide) in paragraph at lines 1212--1213  
[[]]  
[]

LaTeX Warning: `!h' float specifier changed to `!ht'.

LaTeX Warning: File `results/figures/individualized.eps' not found on  
input lin  
e 1218.

Package epstopdf Info: Source file: <results/figures/individualized.eps>  
(epstopdf) Output file: <results/figures/individualized-eps-  
convert

```

ed-to.pdf>
(epstopdf)          Command: <repstopdf --
outfile=results/figures/individual
ized-eps-converted-to.pdf results/figures/individualized.eps>
(epstopdf)          \includegraphics on input line 1218.
Package epstopdf Info: Output file is already uptodate.

! Package pdftex.def Error: File `results/figures/individualized-eps-
converted-
to.pdf' not found.

See the pdftex.def package documentation for explanation.
Type H <return>  for immediate help.
...

1.1218 ...4cm]{results/figures/individualized.eps}

Using draft setting for this image.
Try typing <return>  to proceed.
If that doesn't work, type X <return>  to quit.

Overfull \hbox (4.41057pt too wide) in paragraph at lines 1218--1219
[] []
[]

LaTeX Warning: `!h' float specifier changed to `!ht'.

LaTeX Warning: File `results/figures/incremental_individualized.eps' not
found
on input line 1224.

Package epstopdf Info: Source file:
<results/figures/incremental_individualized
.eps>
(epstopdf)          Output file:
<results/figures/incremental_individualized
-eps-converted-to.pdf>
(epstopdf)          Command: <repstopdf --
outfile=results/figures/incrementa
l_individualized-eps-converted-to.pdf
results/figures/incremental_individualize
d.eps>
(epstopdf)          \includegraphics on input line 1224.
Package epstopdf Info: Output file is already uptodate.

! Package pdftex.def Error: File
`results/figures/incremental_individualized-ep
s-converted-to.pdf' not found.

See the pdftex.def package documentation for explanation.
Type H <return>  for immediate help.

```

...

1.1224 .../figures/incremental\_individualized.eps}

Using draft setting for this image.

Try typing <return> to proceed.

If that doesn't work, type X <return> to quit.

Overfull \hbox (4.41057pt too wide) in paragraph at lines 1224--1225

[][]

[]

LaTeX Warning: `!h' float specifier changed to `!ht'.

LaTeX Warning: File `results/figures/eigenvalues\_synflood.eps' not found  
on inp  
ut line 1230.

Package epstopdf Info: Source file:

<results/figures/eigenvalues\_synflood.eps>

(epstopdf) Output file:

<results/figures/eigenvalues\_synflood-eps-c

onverted-to.pdf>

(epstopdf) Command: <repstopdf --

outfile=results/figures/eigenvalue

s\_synflood-eps-converted-to.pdf results/figures/eigenvalues\_synflood.eps>

(epstopdf) \includegraphics on input line 1230.

Package epstopdf Info: Output file is already uptodate.

! Package pdftex.def Error: File `results/figures/eigenvalues\_synflood-  
eps-conv  
erted-to.pdf' not found.

See the pdftex.def package documentation for explanation.

Type H <return> for immediate help.

...

1.1230 ...results/figures/eigenvalues\_synflood.eps}

Using draft setting for this image.

Try typing <return> to proceed.

If that doesn't work, type X <return> to quit.

LaTeX Warning: `!h' float specifier changed to `!ht'.

LaTeX Warning: File `results/figures/eigenvalues\_fraggle.eps' not found  
on inpu  
t line 1236.

```
1
2
3
4 Package epstopdf Info: Source file:
5 <results/figures/eigenvalues_fraggle.eps>
6 (epstopdf)          Output file: <results/figures/eigenvalues_fraggle-
7 eps-co
8 nverted-to.pdf>
9 (epstopdf)          Command: <repstopdf --
10 outfile=results/figures/eigenvalue
11 s_fraggle-eps-converted-to.pdf results/figures/eigenvalues_fraggle.eps>
12 (epstopdf)          \includegraphics on input line 1236.
13 Package epstopdf Info: Output file is already uptodate.
```

```
14
15
16 ! Package pdftex.def Error: File `results/figures/eigenvalues_fraggle-
17 eps-conve
18 rted-to.pdf' not found.
```

```
19
20 See the pdftex.def package documentation for explanation.
21 Type H <return> for immediate help.
22 ...
```

```
23
24 1.1236 ...results/figures/eigenvalues_fraggle.eps}
```

```
25
26 Using draft setting for this image.
27 Try typing <return> to proceed.
28 If that doesn't work, type X <return> to quit.
```

```
29
30
31 LaTeX Warning: `!h' float specifier changed to `!ht'.
```

```
32
33
34 LaTeX Warning: File `results/figures/eigenvalues_portscan.eps' not found
35 on inp
36 ut line 1242.
```

```
37
38 Package epstopdf Info: Source file:
39 <results/figures/eigenvalues_portscan.eps>
40 (epstopdf)          Output file:
41 <results/figures/eigenvalues_portscan-eps-c
42 onverted-to.pdf>
43 (epstopdf)          Command: <repstopdf --
44 outfile=results/figures/eigenvalue
45 s_portscan-eps-converted-to.pdf results/figures/eigenvalues_portscan.eps>
46 (epstopdf)          \includegraphics on input line 1242.
47 Package epstopdf Info: Output file is already uptodate.
```

```
48
49
50 ! Package pdftex.def Error: File `results/figures/eigenvalues_portscan-
51 eps-conv
52 erted-to.pdf' not found.
```

```
53
54 See the pdftex.def package documentation for explanation.
55 Type H <return> for immediate help.
56 ...
```

```
57
58 1.1242 ...results/figures/eigenvalues_portscan.eps}
```

Using draft setting for this image.  
Try typing <return> to proceed.  
If that doesn't work, type X <return> to quit.

LaTeX Warning: `!h' float specifier changed to `!ht'.

AED: lastpage setting LastPage  
[22] [23] [24] [25]

Package natbib Warning: There were undefined citations.

Package atveryend Info: Empty hook `BeforeClearDocument' on input line  
1535.

Package atveryend Info: Empty hook `AfterLastShipout' on input line 1535.  
(./2014eurasip.aux)

Package atveryend Info: Executing hook `AtVeryEndDocument' on input line  
1535.

Package atveryend Info: Executing hook `AtEndAfterFileList' on input line  
1535.

Package rerunfilecheck Info: File `2014eurasip.out' has not changed.  
(rerunfilecheck) Checksum:  
E5D494E18316CB89BECC270D8CF2E148;1667.

LaTeX Font Warning: Size substitutions with differences  
(Font) up to 1.0pt have occurred.

LaTeX Font Warning: Some font shapes were not available, defaults  
substituted.

LaTeX Warning: There were undefined references.

Package atveryend Info: Empty hook `AtVeryVeryEnd' on input line 1535.  
)

Here is how much of TeX's memory you used:

14904 strings out of 493093  
219192 string characters out of 6138550  
459009 words of memory out of 5000000  
18011 multiletter control sequences out of 15000+600000  
20064 words of font info for 75 fonts, out of 8000000 for 9000  
1141 hyphenation exceptions out of 8191  
42i,15n,45p,1162b,713s stack positions out of  
5000i,500n,10000p,200000b,80000s

pdfTeX warning (dest): name{address2} has been referenced but does not  
exist,

replaced by a fixed one

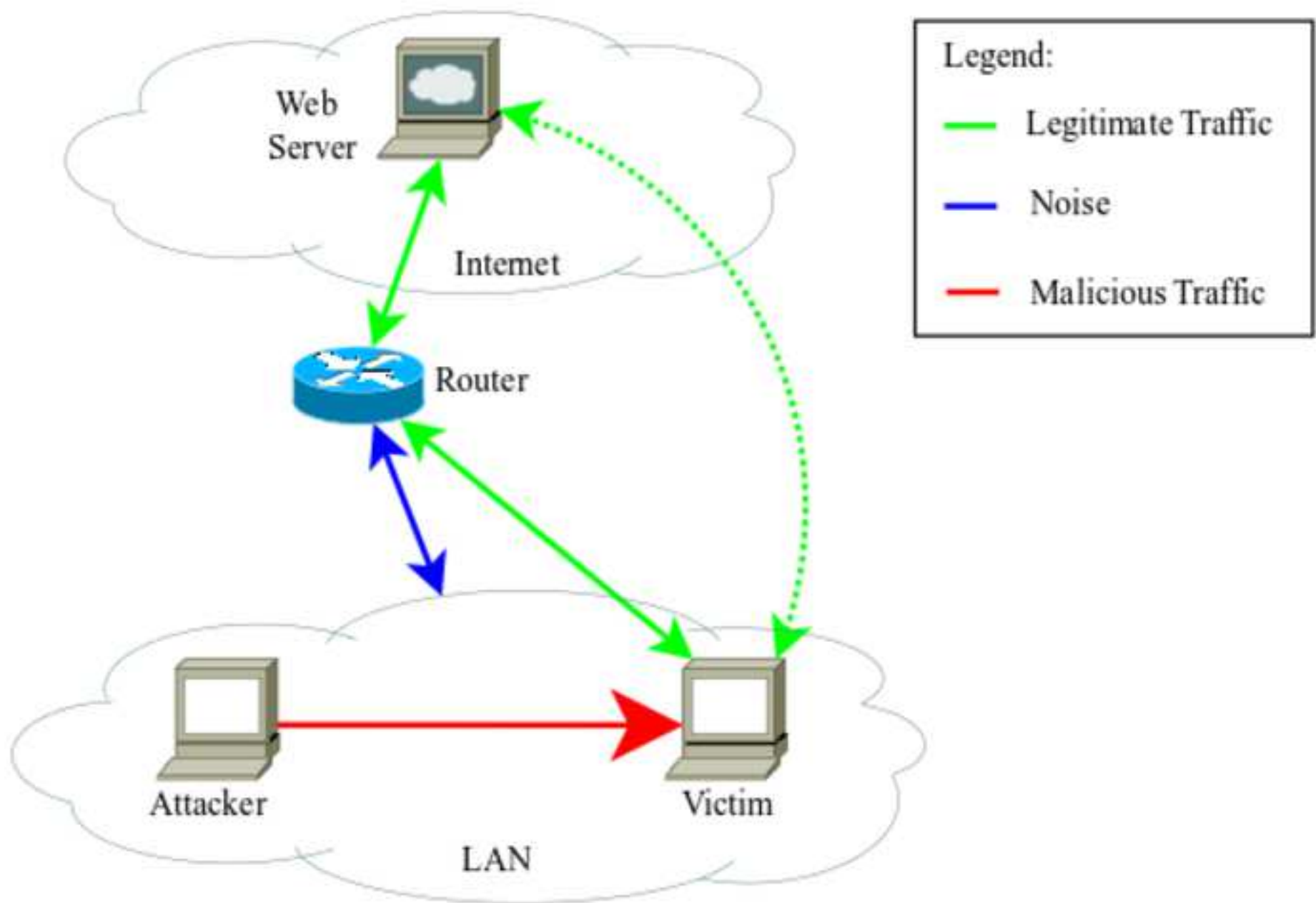
pdfTeX warning (dest): name{address1} has been referenced but does not  
exist, r

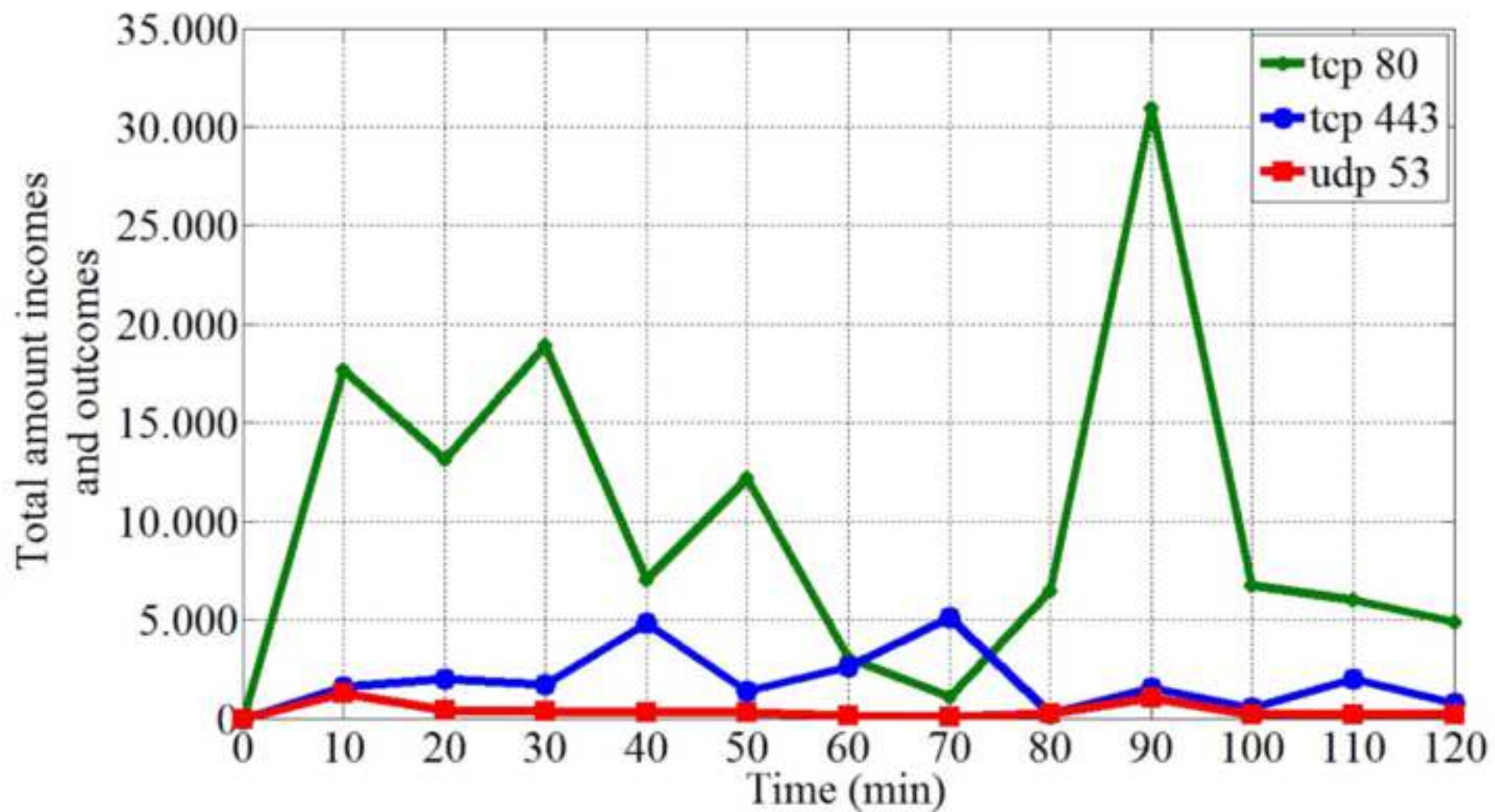
eplaced by a fixed one

```

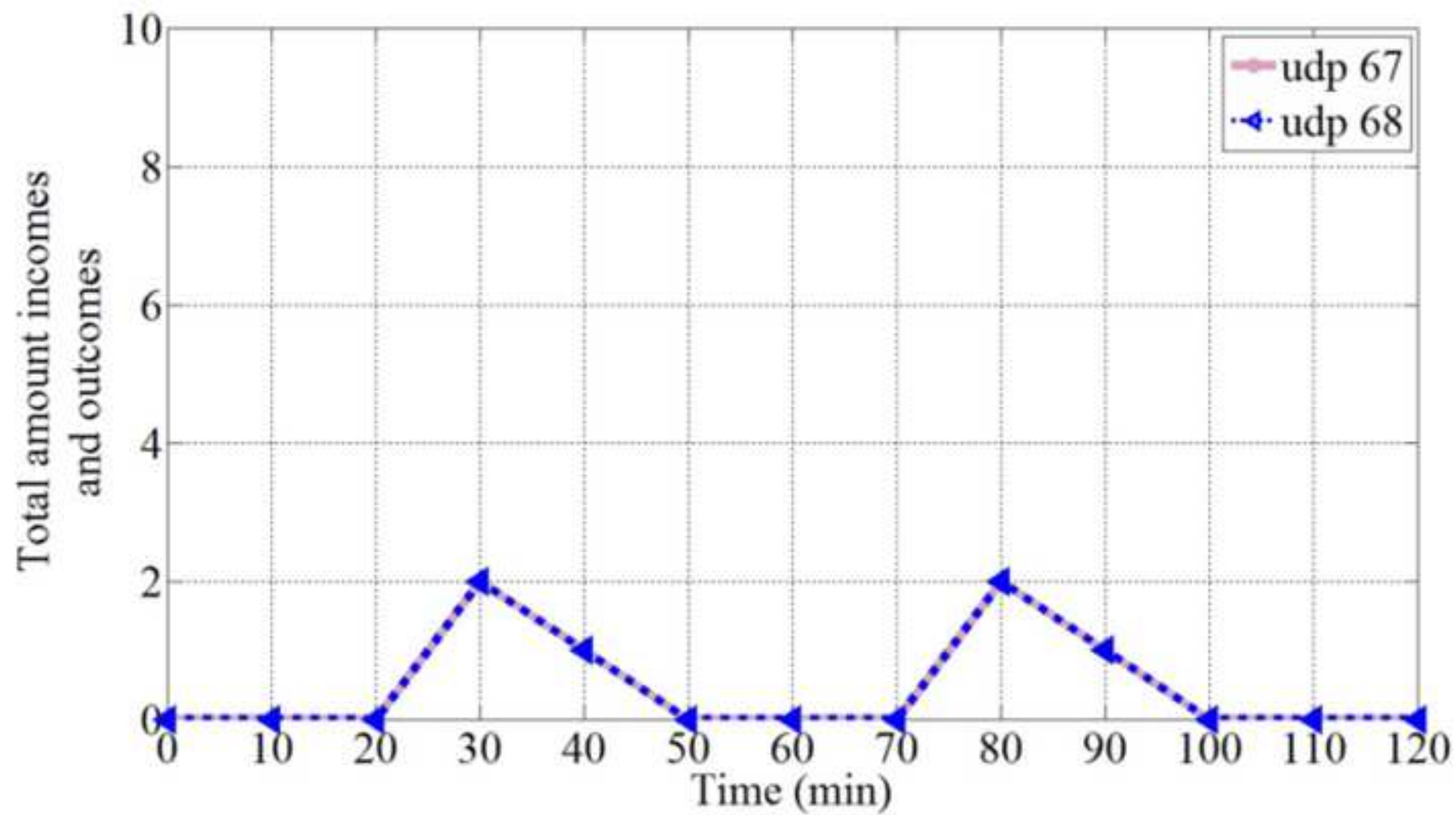
{c:/TeXLive/2015/texmf-
dist/fonts/enc/dvips/base/8r.enc}<c:/TeXLive/2015/texmf-
dist/fonts/typel/public/amsfonts/cm/cmbx10.pfb><c:/TeXLive/2015/texmf-
dist/font
s/typel/public/amsfonts/cm/cmbx5.pfb><c:/TeXLive/2015/texmf-
dist/fonts/typel/pu
blic/amsfonts/cm/cmbx7.pfb><c:/TeXLive/2015/texmf-
dist/fonts/typel/public/amsfo
nts/cm/cmbx8.pfb><c:/TeXLive/2015/texmf-
dist/fonts/typel/public/amsfonts/cm/cme
x10.pfb><c:/TeXLive/2015/texmf-
dist/fonts/typel/public/amsfonts/cm/cmmi10.pfb><
c:/TeXLive/2015/texmf-
dist/fonts/typel/public/amsfonts/cm/cmmi5.pfb><c:/TeXLive
/2015/texmf-
dist/fonts/typel/public/amsfonts/cm/cmmi7.pfb><c:/TeXLive/2015/texm
f-dist/fonts/typel/public/amsfonts/cm/cmmi8.pfb><c:/TeXLive/2015/texmf-
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ts/typel/public/amsfonts/cm/cmmib10.pfb><c:/TeXLive/2015/texmf-
dist/fonts/typel
/public/amsfonts/cmextra/cmmib7.pfb><c:/TeXLive/2015/texmf-
dist/fonts/typel/pub
lic/amsfonts/cm/cmr10.pfb><c:/TeXLive/2015/texmf-
dist/fonts/typel/public/amsfon
ts/cm/cmr5.pfb><c:/TeXLive/2015/texmf-
dist/fonts/typel/public/amsfonts/cm/cmr7.
pfb><c:/TeXLive/2015/texmf-
dist/fonts/typel/public/amsfonts/cm/cmr8.pfb><c:/TeX
Live/2015/texmf-
dist/fonts/typel/public/amsfonts/cm/cmss10.pfb><c:/TeXLive/2015
/texmf-
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st/fonts/typel/public/amsfonts/cm/cmss8.pfb><c:/TeXLive/2015/texmf-
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ypel/public/amsfonts/cm/cmssbx10.pfb><c:/TeXLive/2015/texmf-
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dist/fonts/typel/public/amsf
onts/cm/cmsyl10.pfb><c:/TeXLive/2015/texmf-
dist/fonts/typel/public/amsfonts/cm/c
msy7.pfb><c:/TeXLive/2015/texmf-
dist/fonts/typel/public/amsfonts/cm/cmti10.pfb>
<c:/TeXLive/2015/texmf-
dist/fonts/typel/public/amsfonts/symbols/msbm10.pfb><c:/
TeXLive/2015/texmf-dist/fonts/typel/urw/courier/ucrr8a.pfb>
Output written on 2014eurasip.pdf (25 pages, 341626 bytes).
PDF statistics:
  496 PDF objects out of 1000 (max. 8388607)
  439 compressed objects within 5 object streams
  106 named destinations out of 1000 (max. 500000)
  193 words of extra memory for PDF output out of 10000 (max. 10000000)

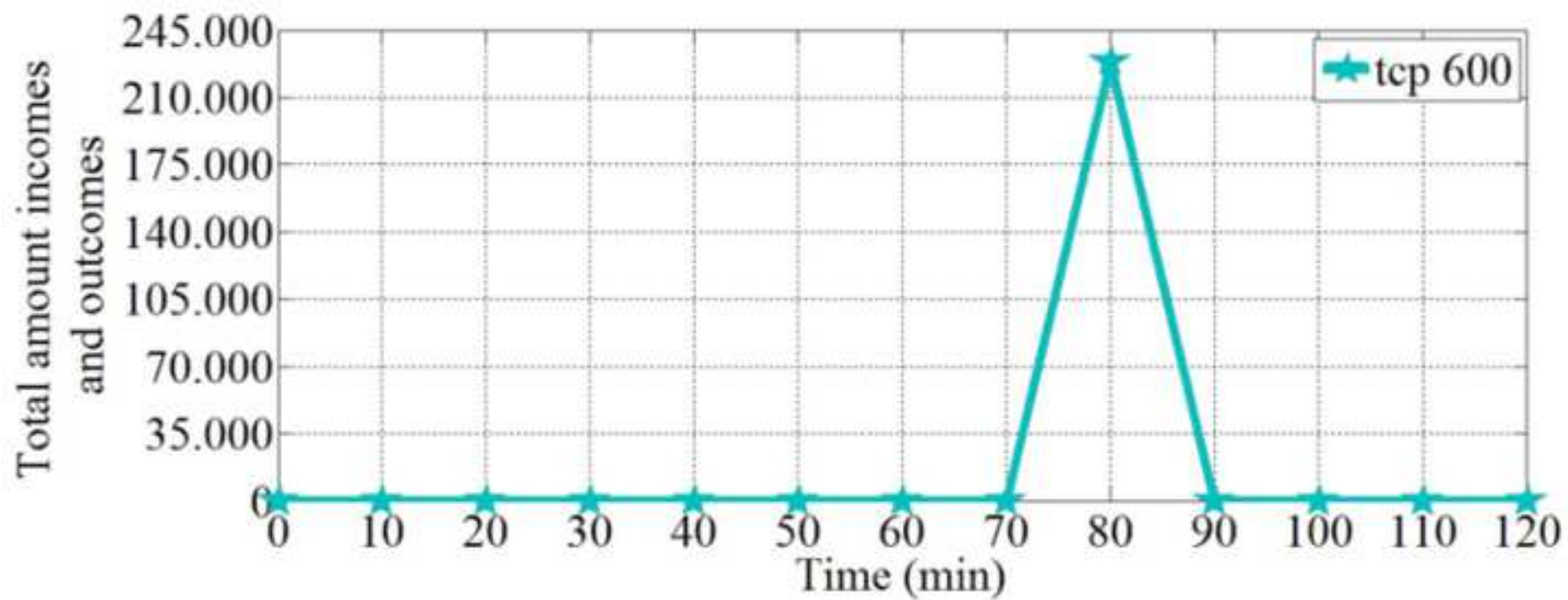
```

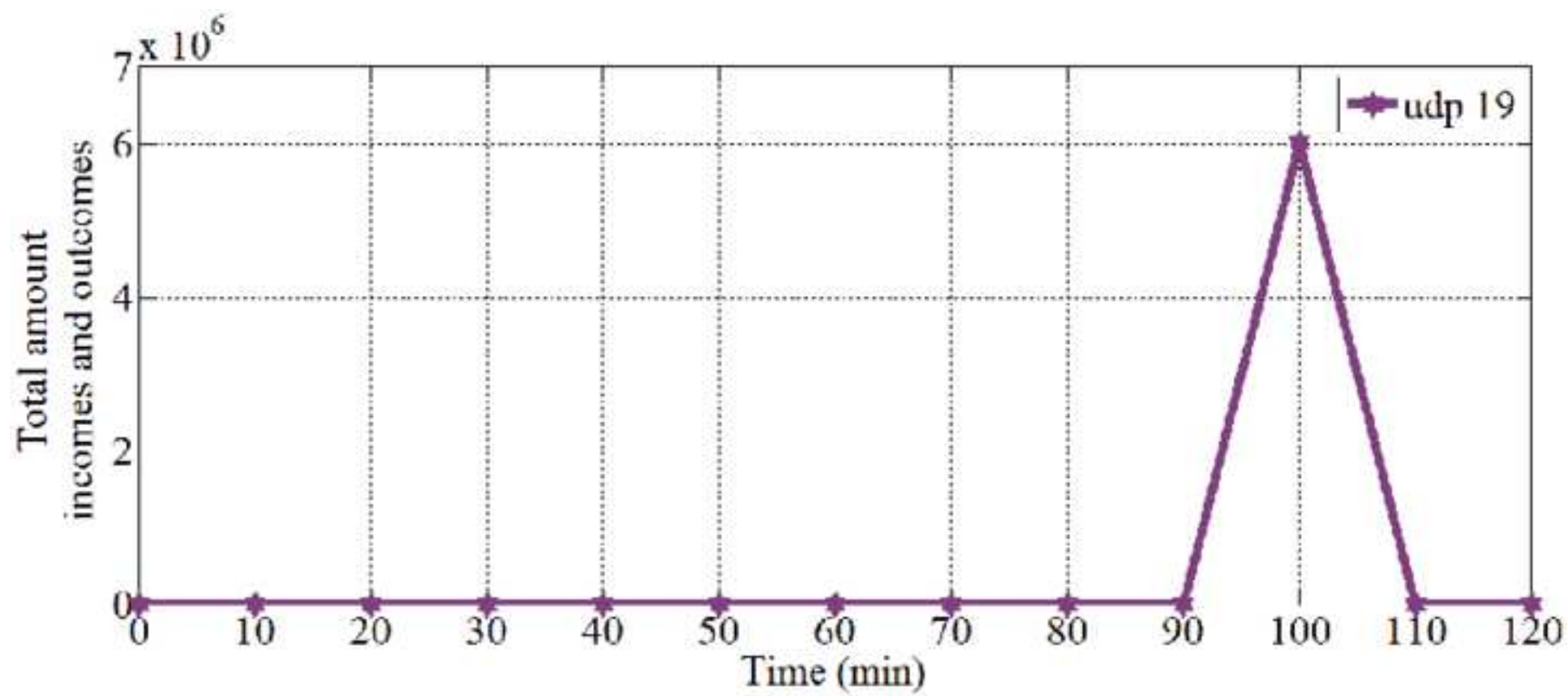


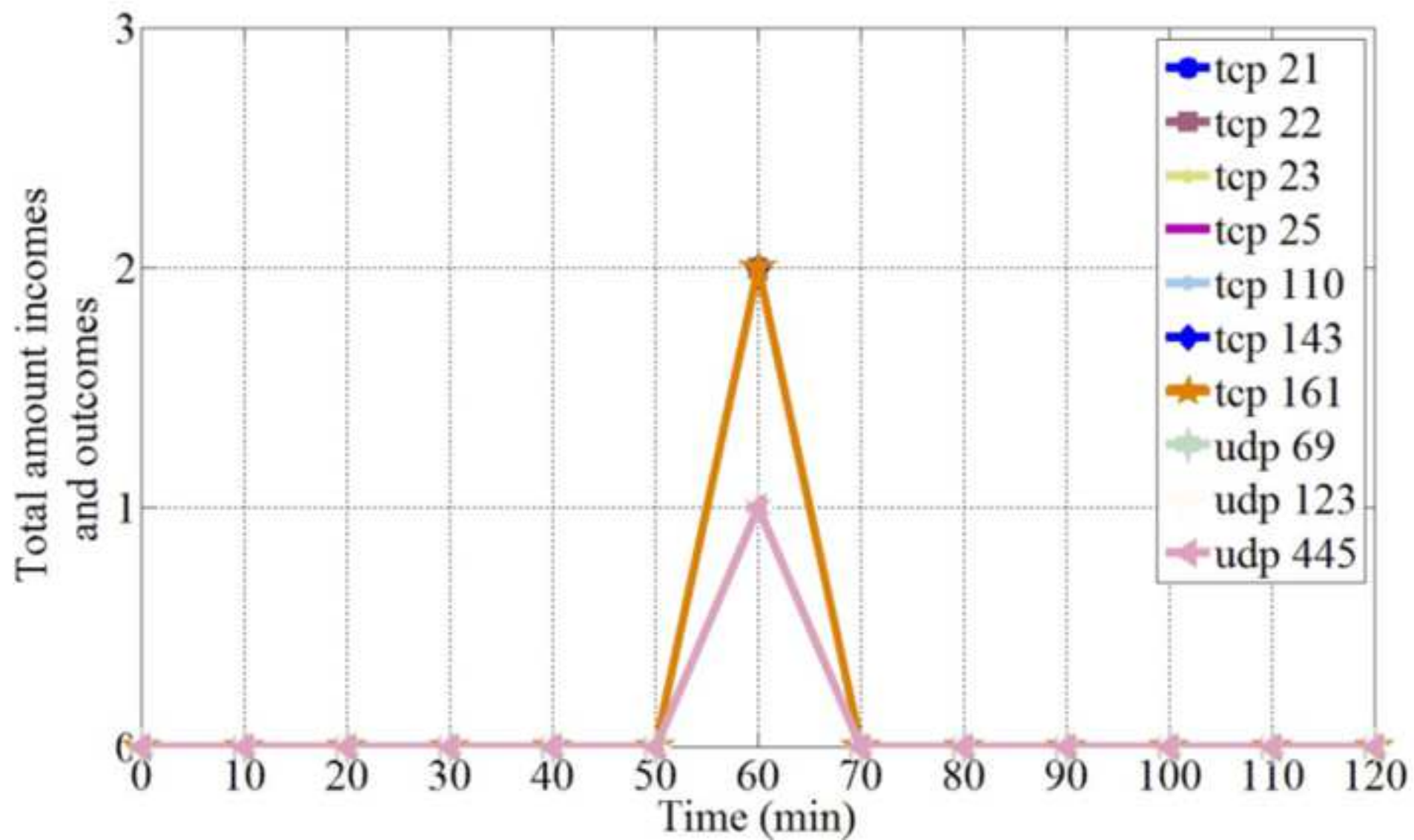


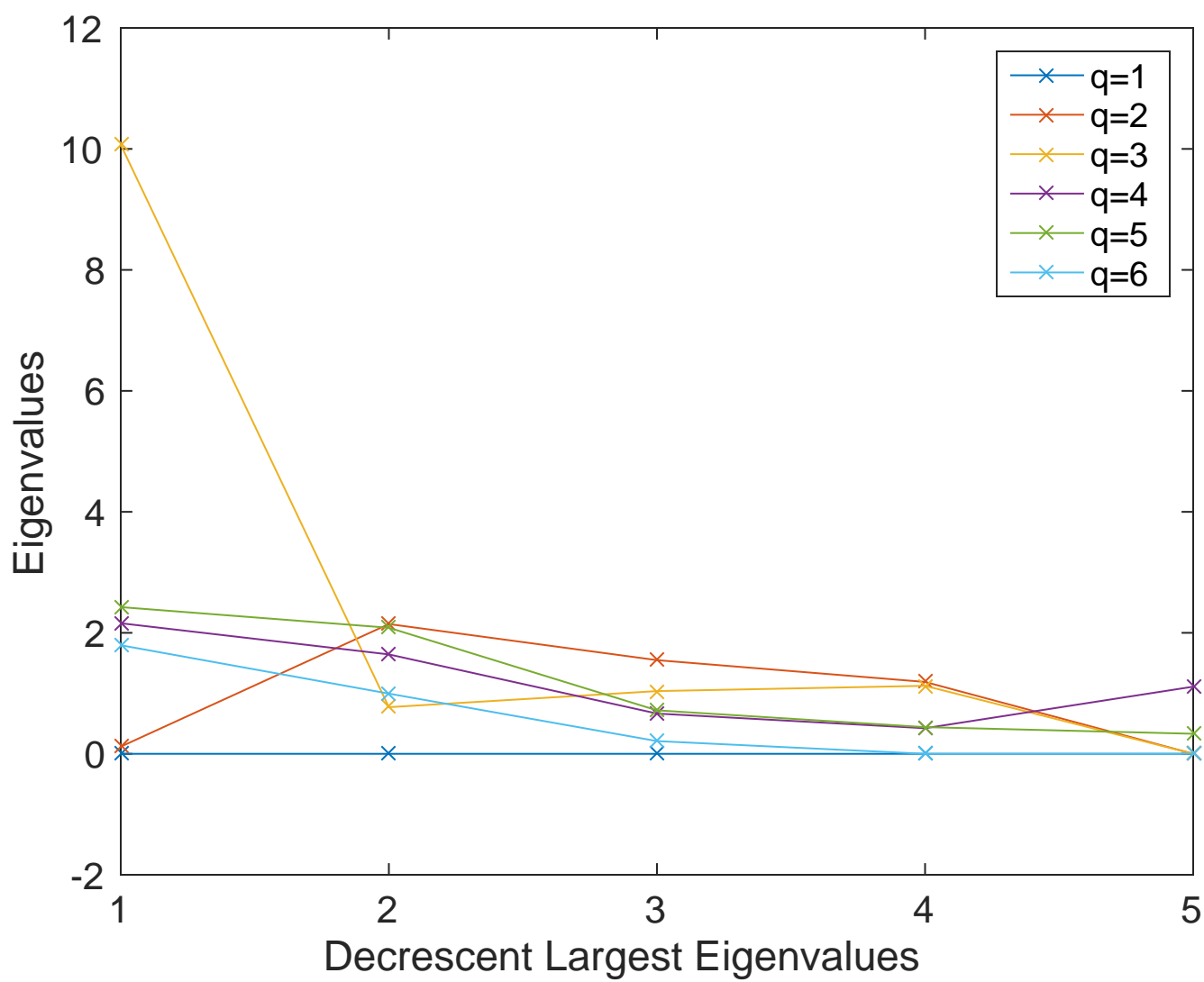


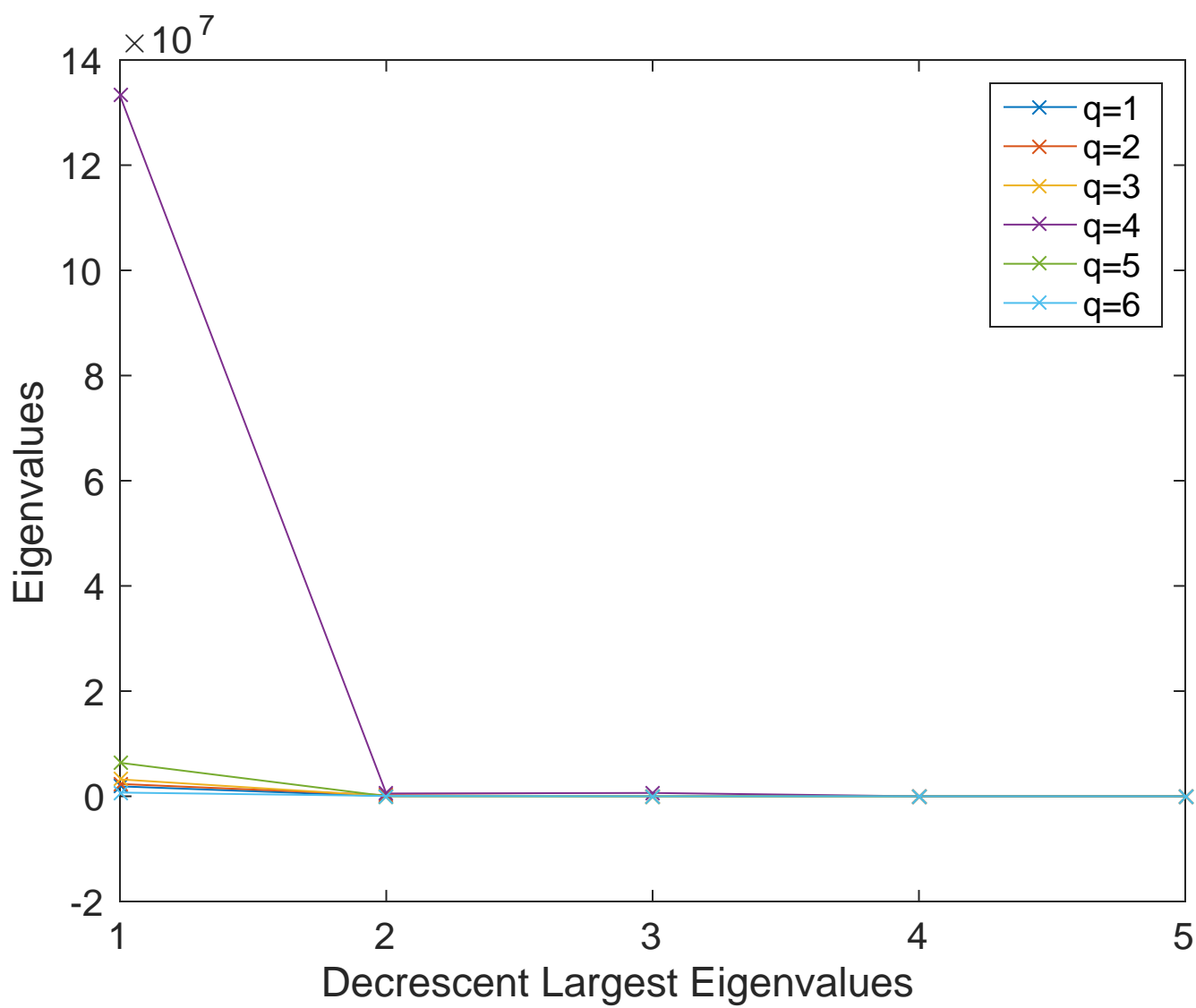


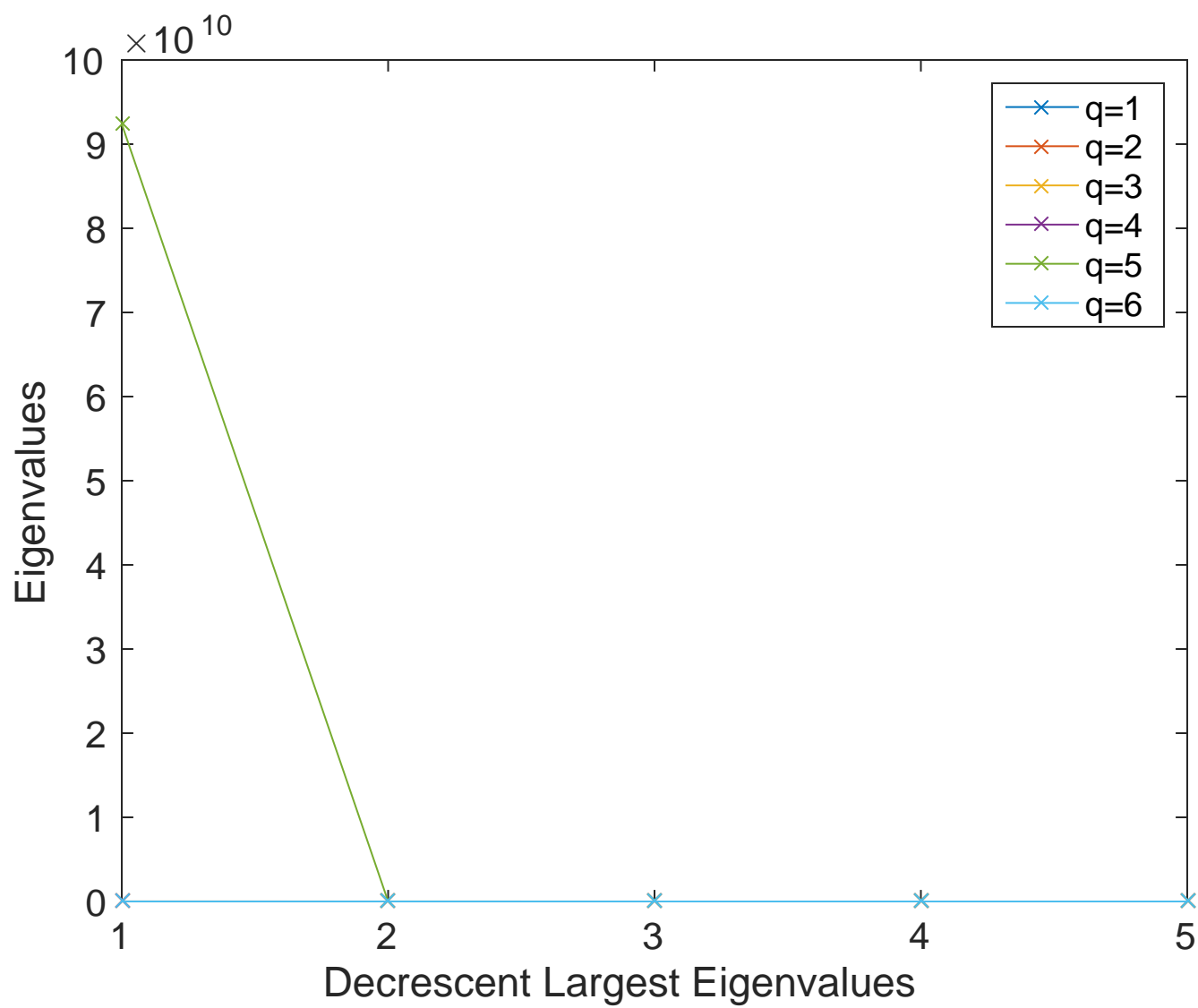












m	q=1					q=2					q=3					...	q=6				
80	$x_{1,1}$	$x_{1,2}$	$x_{1,3}$	...	$x_{1,20}$	$x_{1,21}$	$x_{1,22}$	$x_{1,23}$	...	$x_{1,40}$	$x_{1,41}$	$x_{1,42}$	$x_{1,43}$	...	$x_{1,60}$	...	$x_{1,101}$	$x_{1,102}$	$x_{1,103}$	...	$x_{1,120}$
443	$x_{2,1}$	$x_{2,2}$	$x_{2,3}$	...	$x_{2,20}$	$x_{2,21}$	$x_{2,22}$	$x_{2,23}$	...	$x_{2,40}$	$x_{2,41}$	$x_{2,42}$	$x_{2,43}$	...	$x_{2,60}$	...	$x_{2,101}$	$x_{2,102}$	$x_{2,103}$	...	$x_{2,120}$
53	$x_{3,1}$	$x_{3,2}$	$x_{3,3}$	...	$x_{3,20}$	$x_{3,21}$	$x_{3,22}$	$x_{3,23}$	...	$x_{3,40}$	$x_{3,41}$	$x_{3,42}$	$x_{3,43}$	...	$x_{3,60}$	...	$x_{3,101}$	$x_{3,102}$	$x_{3,103}$	...	$x_{3,120}$
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	...	⋮	⋮	⋮	⋮	⋮
68	$x_{17,1}$	$x_{17,2}$	$x_{17,3}$	...	$x_{17,20}$	$x_{17,21}$	$x_{17,22}$	$x_{17,23}$	...	$x_{17,40}$	$x_{17,41}$	$x_{17,42}$	$x_{17,43}$	...	$x_{17,60}$	...	$x_{17,101}$	$x_{17,102}$	$x_{17,103}$	...	$x_{17,120}$

$x^{(1)}$   
no attack

$x_{41} = x^{(1)} | x^{(3)}_{41}$

$x_{42} = x^{(1)} | x^{(3)}_{41} | x^{(3)}_{42}$

$x_{43} = x^{(1)} | x^{(3)}_{41} | x^{(3)}_{42} | x^{(3)}_{43}$

$x_{60} = x^{(1)} | x^{(3)}_{41} | x^{(3)}_{42} | x^{(3)}_{60}$

$s_{42} > 1$



m	q=1					q=2					q=3					...	q=6				
80	$x_{1,1}$	$x_{1,2}$	$x_{1,3}$	...	$x_{1,20}$	$x_{1,21}$	$x_{1,22}$	$x_{1,23}$	...	$x_{1,40}$	$x_{1,41}$	$x_{1,42}$	$x_{1,43}$	...	$x_{1,60}$	...	$x_{1,101}$	$x_{1,102}$	$x_{1,103}$	...	$x_{1,120}$
443	$x_{2,1}$	$x_{2,2}$	$x_{2,3}$	...	$x_{2,20}$	$x_{2,21}$	$x_{2,22}$	$x_{2,23}$	...	$x_{2,40}$	$x_{2,41}$	$x_{2,42}$	$x_{2,43}$	...	$x_{2,60}$	...	$x_{2,101}$	$x_{2,102}$	$x_{2,103}$	...	$x_{2,120}$
53	$x_{3,1}$	$x_{3,2}$	$x_{3,3}$	...	$x_{3,20}$	$x_{3,21}$	$x_{3,22}$	$x_{3,23}$	...	$x_{3,40}$	$x_{3,41}$	$x_{3,42}$	$x_{3,43}$	...	$x_{3,60}$	...	$x_{3,101}$	$x_{3,102}$	$x_{3,103}$	...	$x_{3,120}$
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	...	⋮	⋮	⋮	⋮	⋮
68	$x_{17,1}$	$x_{17,2}$	$x_{17,3}$	...	$x_{17,20}$	$x_{17,21}$	$x_{17,22}$	$x_{17,23}$	...	$x_{17,40}$	$x_{17,41}$	$x_{17,42}$	$x_{17,43}$	...	$x_{17,60}$	...	$x_{17,101}$	$x_{17,102}$	$x_{17,103}$	...	$x_{17,120}$

$x^{(1)}$   
no attack

$x_{41} = x^{(1)} | x^{(3)}_{41}$

$s_{42} > 1$

$x_{42} = x^{(1)} | x^{(3)}_{41} | x^{(3)}_{42}$

$x_{43} = x^{(1)} | x^{(3)}_{41} | x^{(3)}_{42} | x^{(3)}_{43}$

$x_{60} = x^{(1)} | x^{(3)}_{41} | x^{(3)}_{42} | x^{(3)}_{43} | \dots | x^{(3)}_{60}$

m	q=1					q=2					q=3					...	q=6				
80	x <sub>1,1</sub>	x <sub>1,2</sub>	x <sub>1,3</sub>	...	x <sub>1,20</sub>	x <sub>1,21</sub>	x <sub>1,22</sub>	x <sub>1,23</sub>	...	x <sub>1,40</sub>	x <sub>1,41</sub>	x <sub>1,42</sub>	x <sub>1,43</sub>	...	x <sub>1,60</sub>	...	x <sub>1,101</sub>	x <sub>1,102</sub>	x <sub>1,103</sub>	...	x <sub>1,120</sub>
443	x <sub>2,1</sub>	x <sub>2,2</sub>	x <sub>2,3</sub>	...	x <sub>2,20</sub>	x <sub>2,21</sub>	x <sub>2,22</sub>	x <sub>2,23</sub>	...	x <sub>2,40</sub>	x <sub>2,41</sub>	x <sub>2,42</sub>	x <sub>2,43</sub>	...	x <sub>2,60</sub>	...	x <sub>2,101</sub>	x <sub>2,102</sub>	x <sub>2,103</sub>	...	x <sub>2,120</sub>
53	x <sub>3,1</sub>	x <sub>3,2</sub>	x <sub>3,3</sub>	...	x <sub>3,20</sub>	x <sub>3,21</sub>	x <sub>3,22</sub>	x <sub>3,23</sub>	...	x <sub>3,40</sub>	x <sub>3,41</sub>	x <sub>3,42</sub>	x <sub>3,43</sub>	...	x <sub>3,60</sub>	...	x <sub>3,101</sub>	x <sub>3,102</sub>	x <sub>3,103</sub>	...	x <sub>3,120</sub>
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
68	x <sub>17,1</sub>	x <sub>17,2</sub>	x <sub>17,3</sub>	...	x <sub>17,20</sub>	x <sub>17,21</sub>	x <sub>17,22</sub>	x <sub>17,23</sub>	...	x <sub>17,40</sub>	x <sub>17,41</sub>	x <sub>17,42</sub>	x <sub>17,43</sub>	...	x <sub>17,60</sub>	...	x <sub>17,101</sub>	x <sub>17,102</sub>	x <sub>17,103</sub>	...	x <sub>17,120</sub>

$X^{(1)}$   
no attack

$X_{41}=X^{(1)} \mid X_{41}^{(3)}$

$X_{42}=X^{(1)} \mid X_{42}^{(3)}$

$X_{43}=X^{(1)} \mid X_{43}^{(3)}$


$X_{60}=X^{(1)} \mid X_{60}^{(3)}$

$s_{42} > 1$




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