Analysis of Origin Destination Flows (Raw Data)

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Christophe Diot, Eric D. Kolaczyk, and Nina Taft *

November 10, 2003

BUCS-TR-2003-022

Abstract

In a recent paper, *Structural Analysis of Network Traffic Flows*, we analyzed the set of Origin Destination traffic flows from the Sprint-Europe and Abilene backbone networks. This report presents the complete set of results from analyzing data from both networks. The results in this report are specific to the Sprint-1 and Abilene datasets studied in the above paper. The following results are presented here:

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Report Documentation Page

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1. REPORT DATE **10 NOV 2003**	2. REPORT TYPE	3. DATES COVERED **00-00-2003 to 00-00-2003**
4. TITLE AND SUBTITLE **Analysis of Origin Destination Flows (Raw Data)**		5a. CONTRACT NUMBER
		5b. GRANT NUMBER
		5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)		5d. PROJECT NUMBER
		5e. TASK NUMBER
		5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Boston University,Department of Computer Science,111 Cummington Street,Boston,MA,02215**		8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)
12. DISTRIBUTION/AVAILABILITY STATEMENT **Approved for public release; distribution unlimited**		
13. SUPPLEMENTARY NOTES **The original document contains color images.**		
14. ABSTRACT		
15. SUBJECT TERMS		

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**		**56**	

Standard Form 298 (Rev. 8-98)
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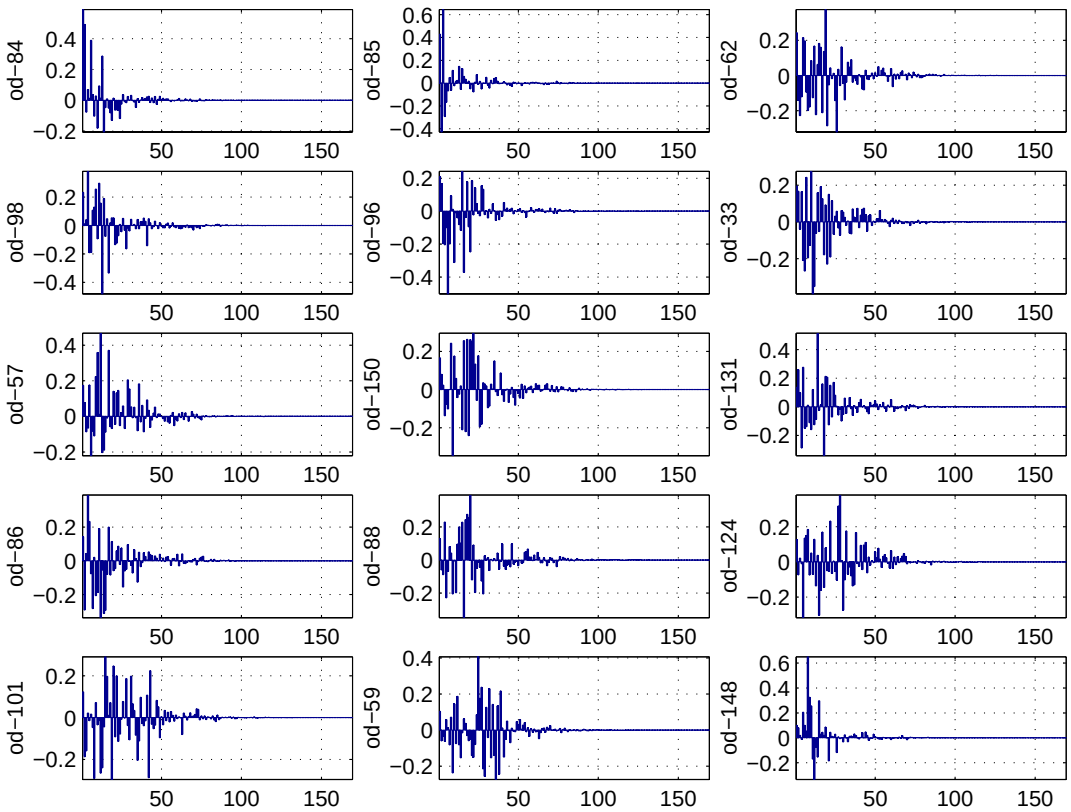
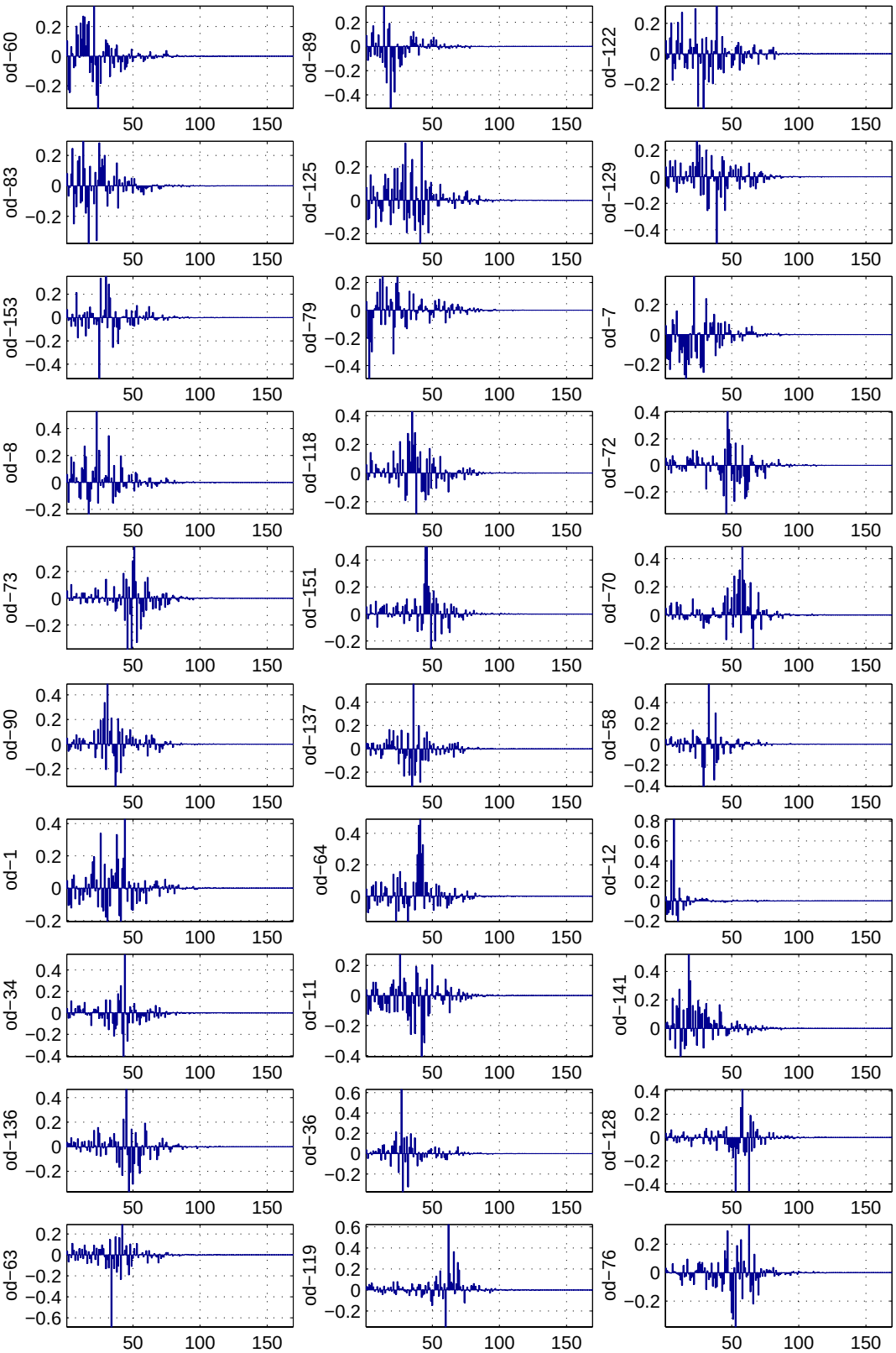
1 Rows of Principal Matrix (V)

In this section, we present all the rows of principal matrix V for the Sprint-1 and Abilene datasets. Please note that the follow results are sorted from large to small OD flow (in terms of mean rate). And the ylabel corresponding to each plot is the OD flow ID.

1.1 Sprint-1

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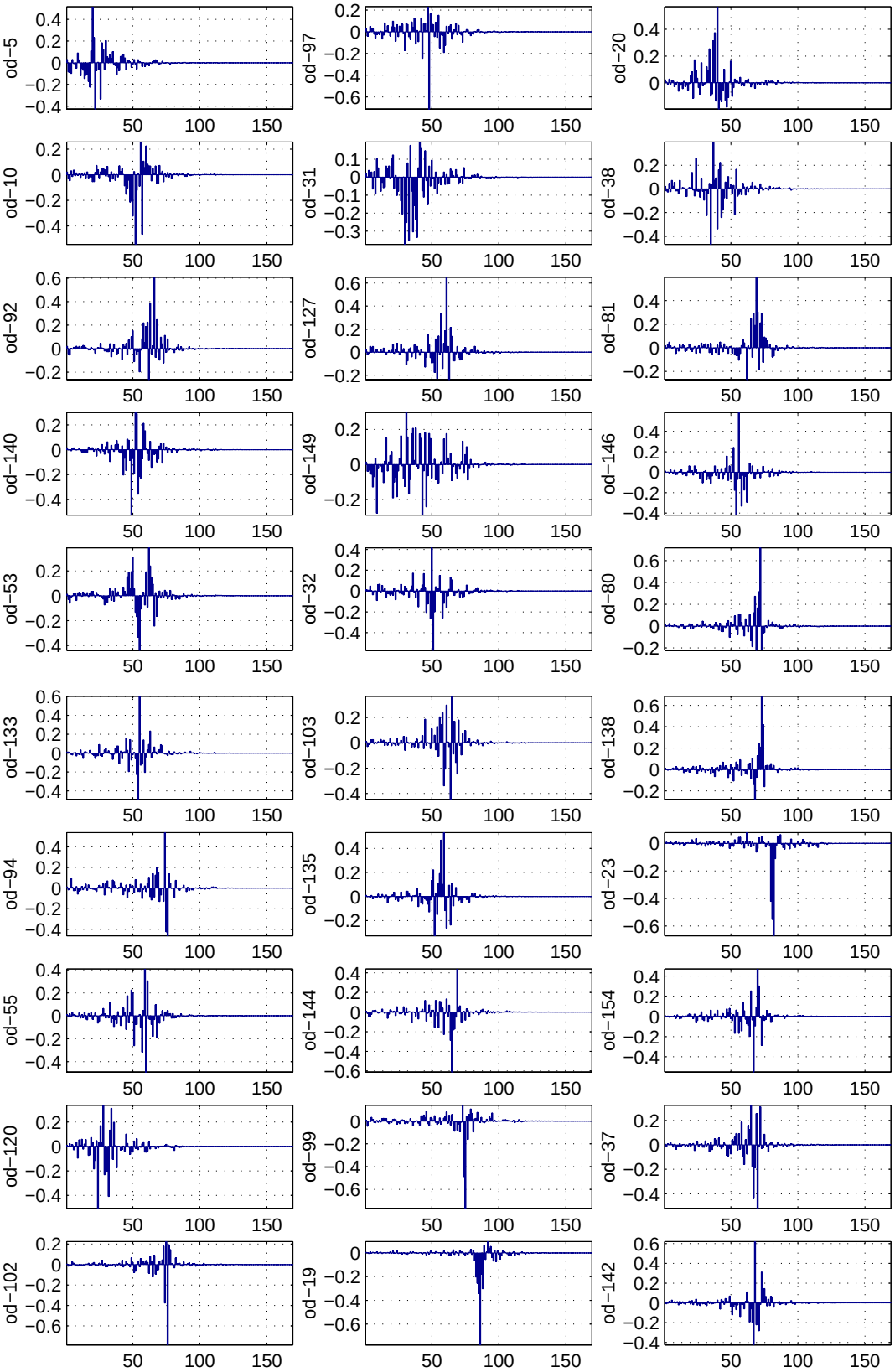
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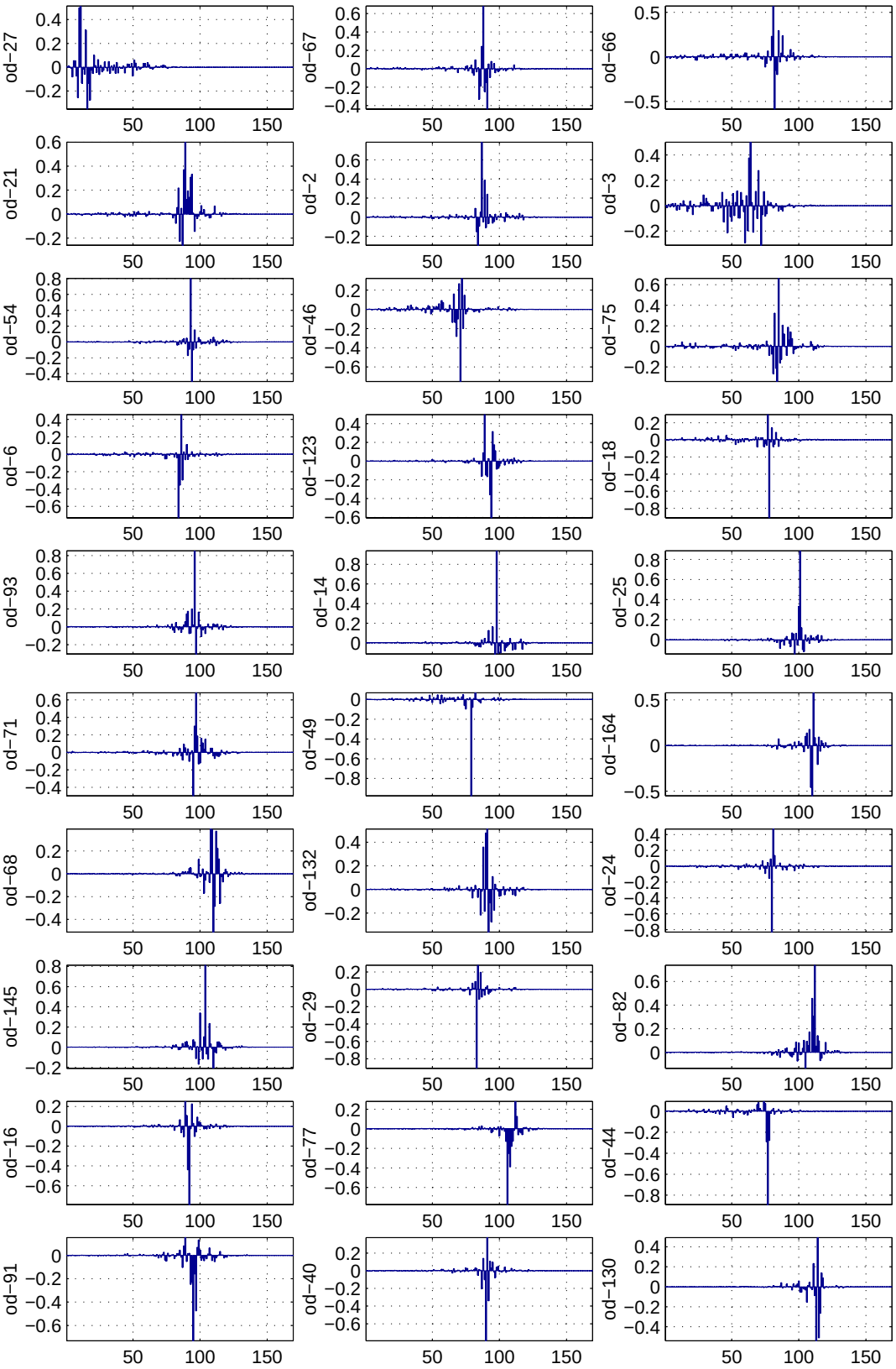
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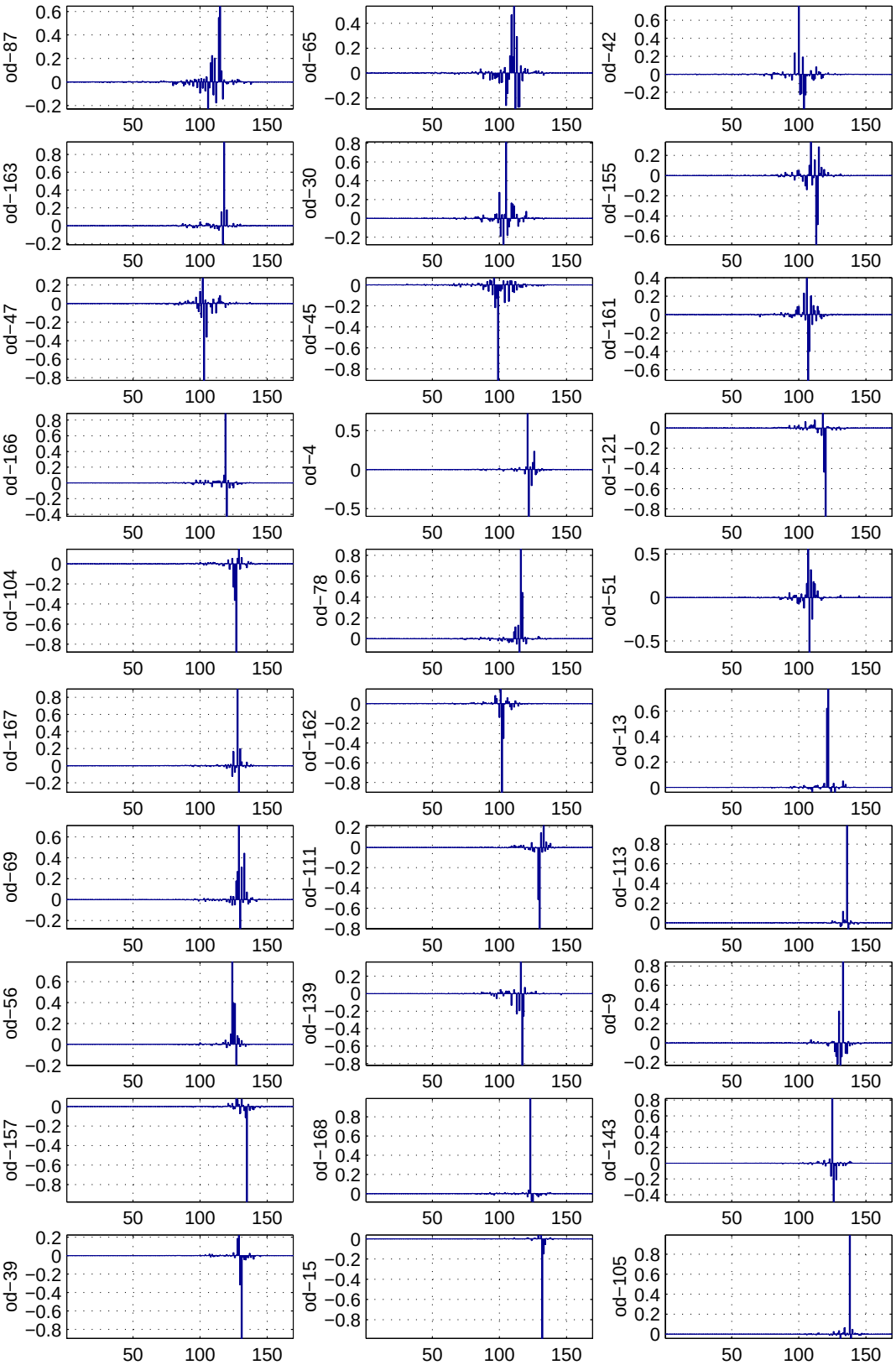
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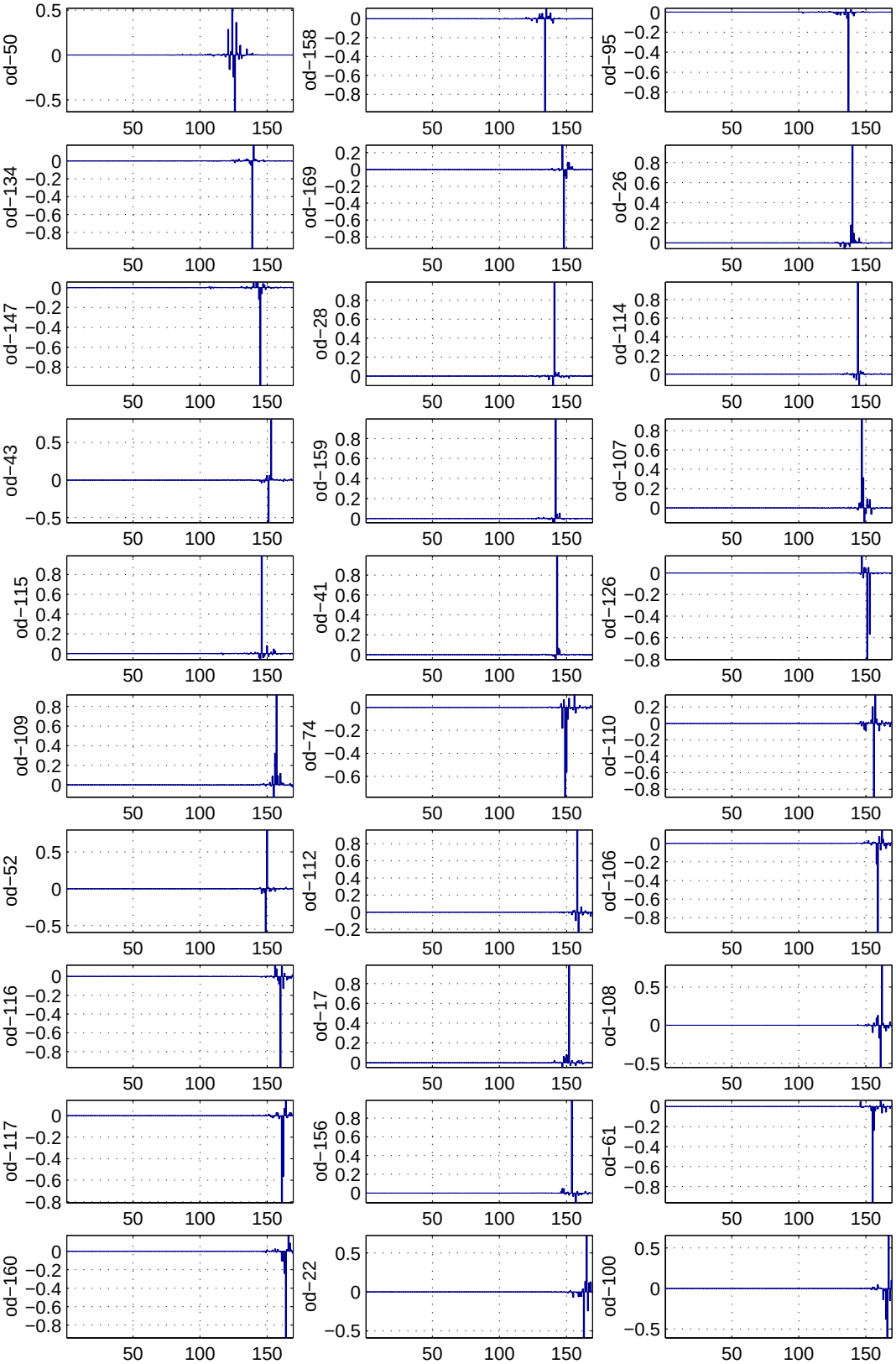
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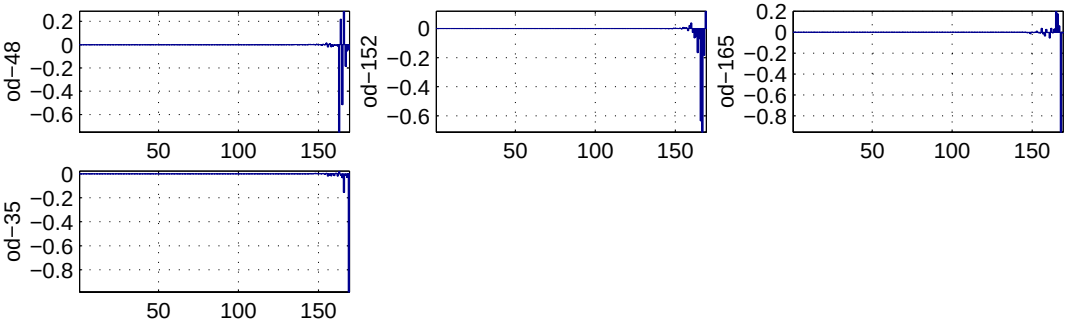
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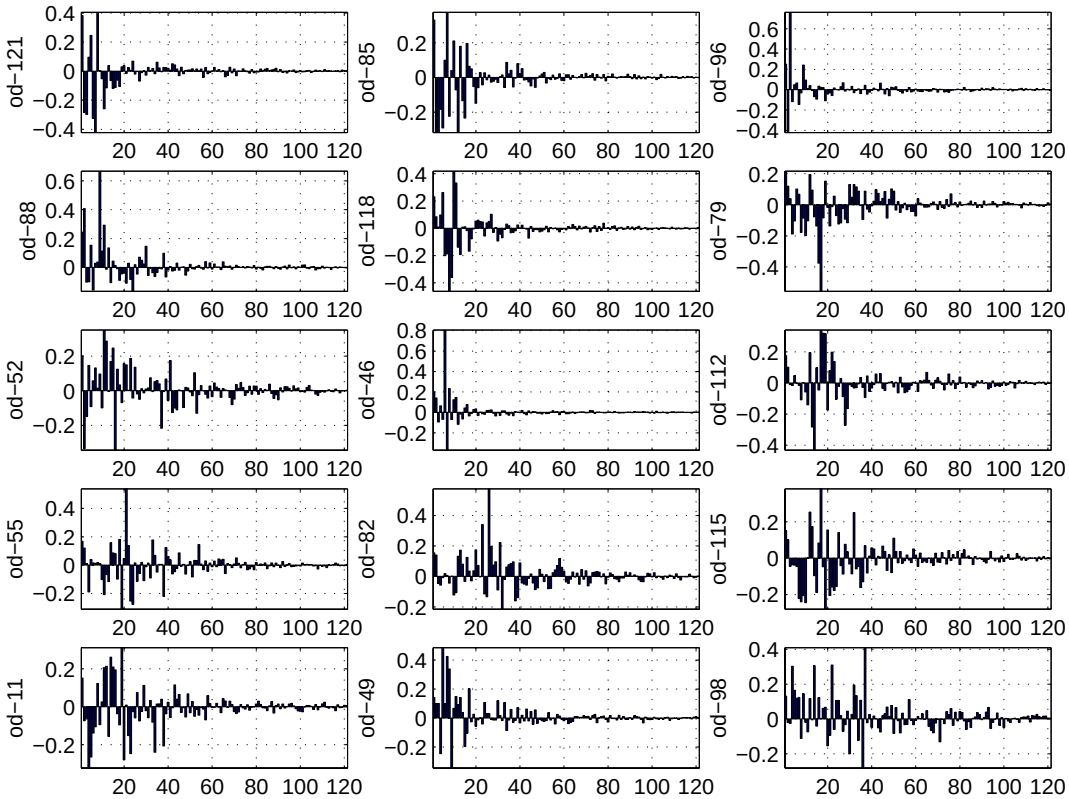
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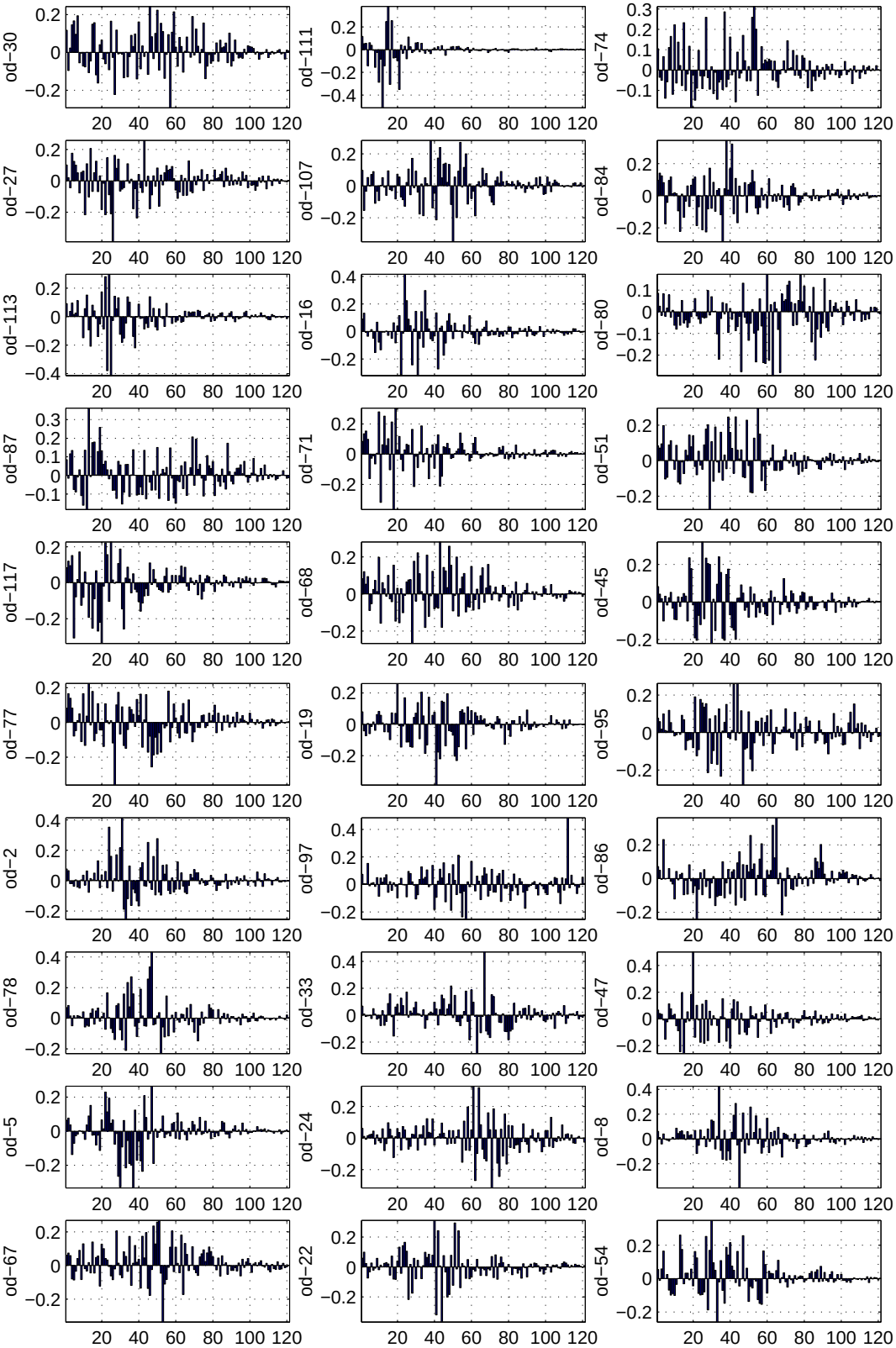
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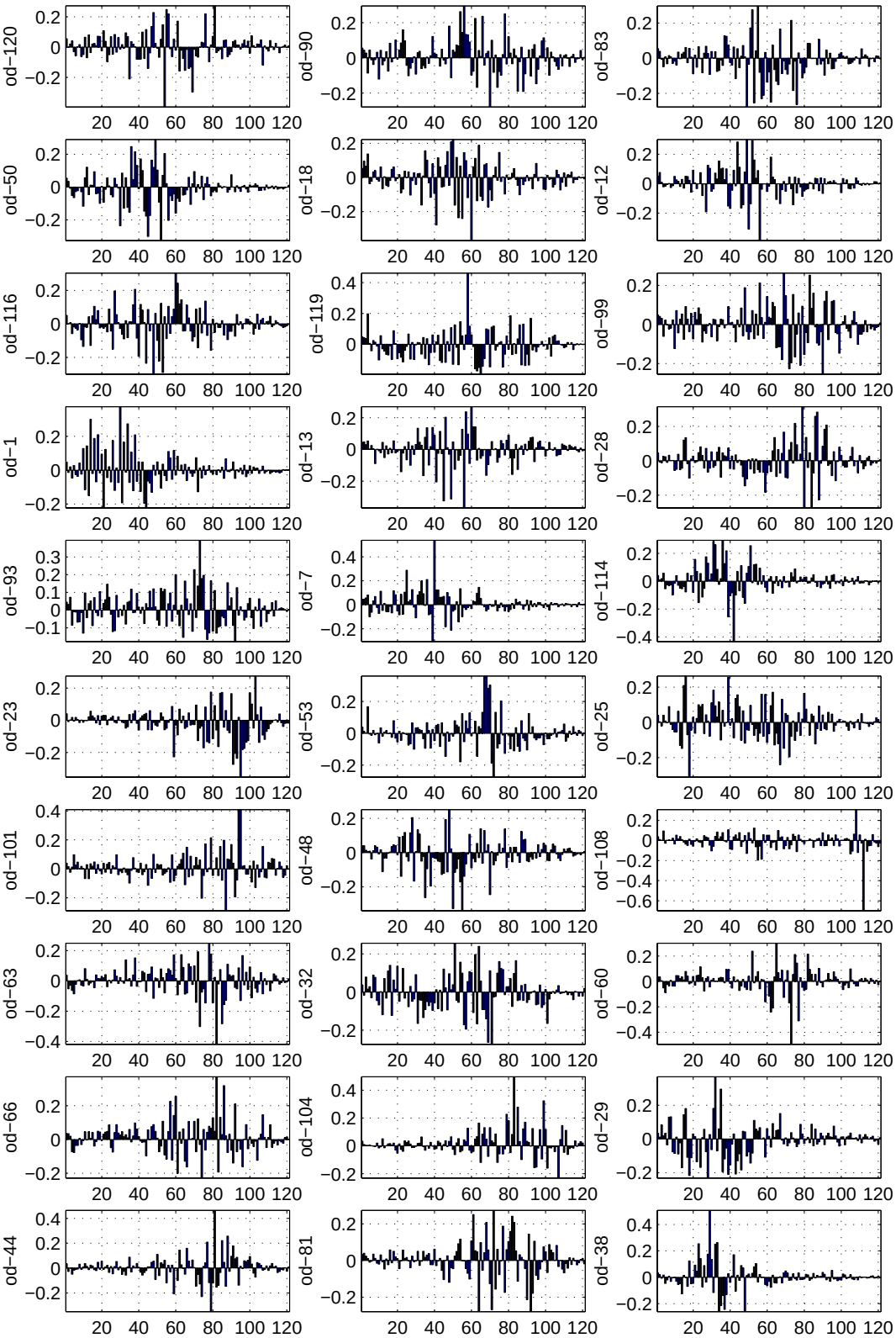
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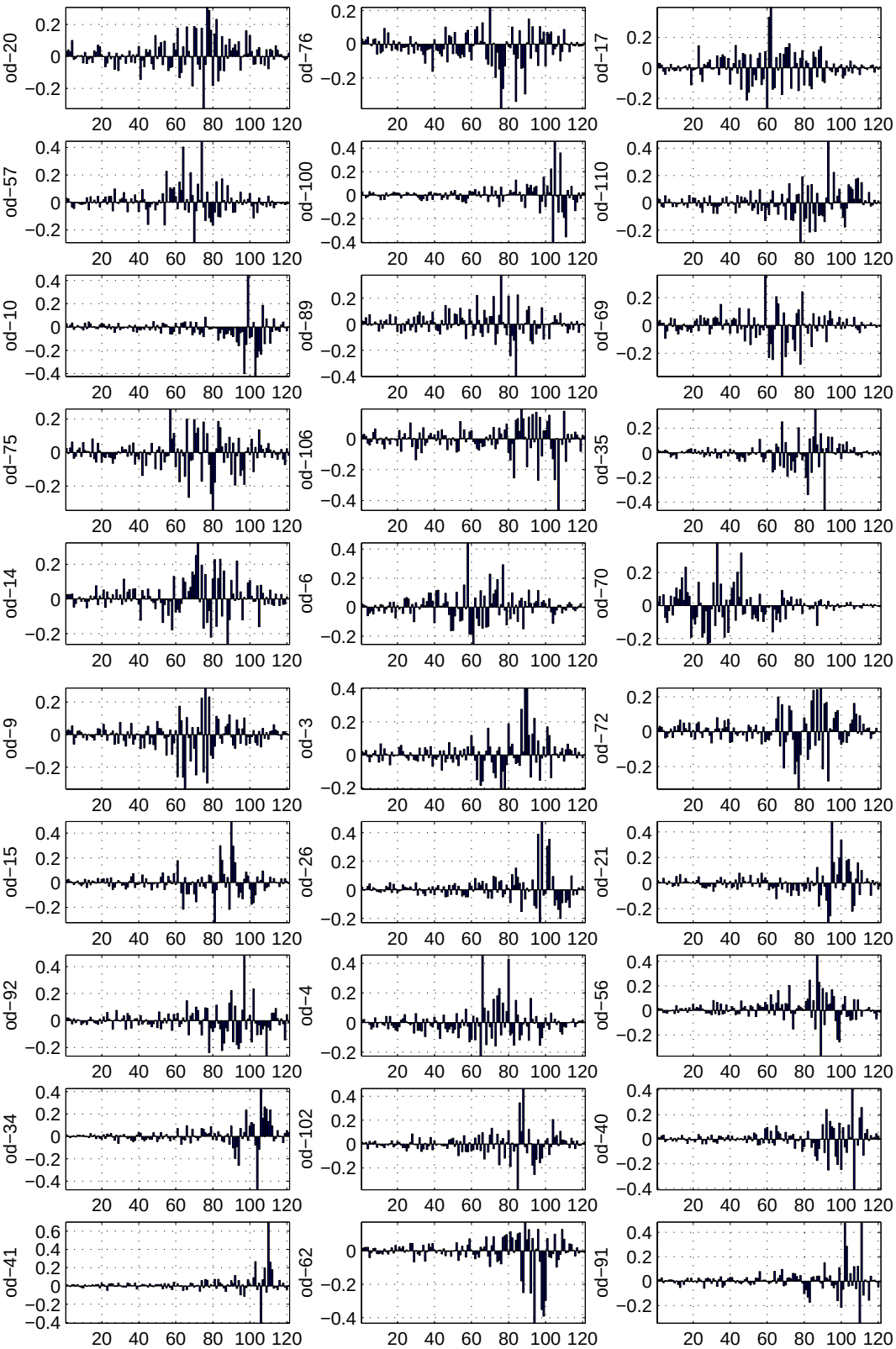
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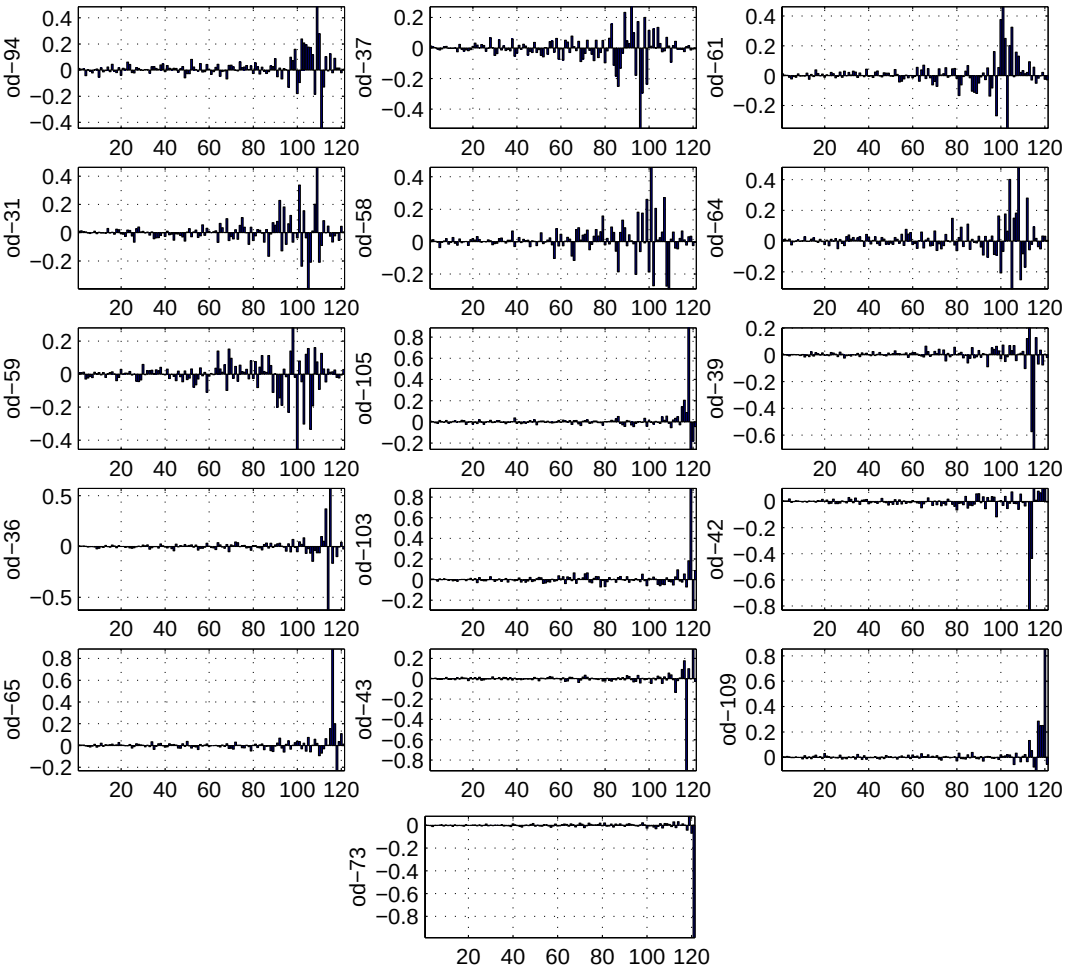
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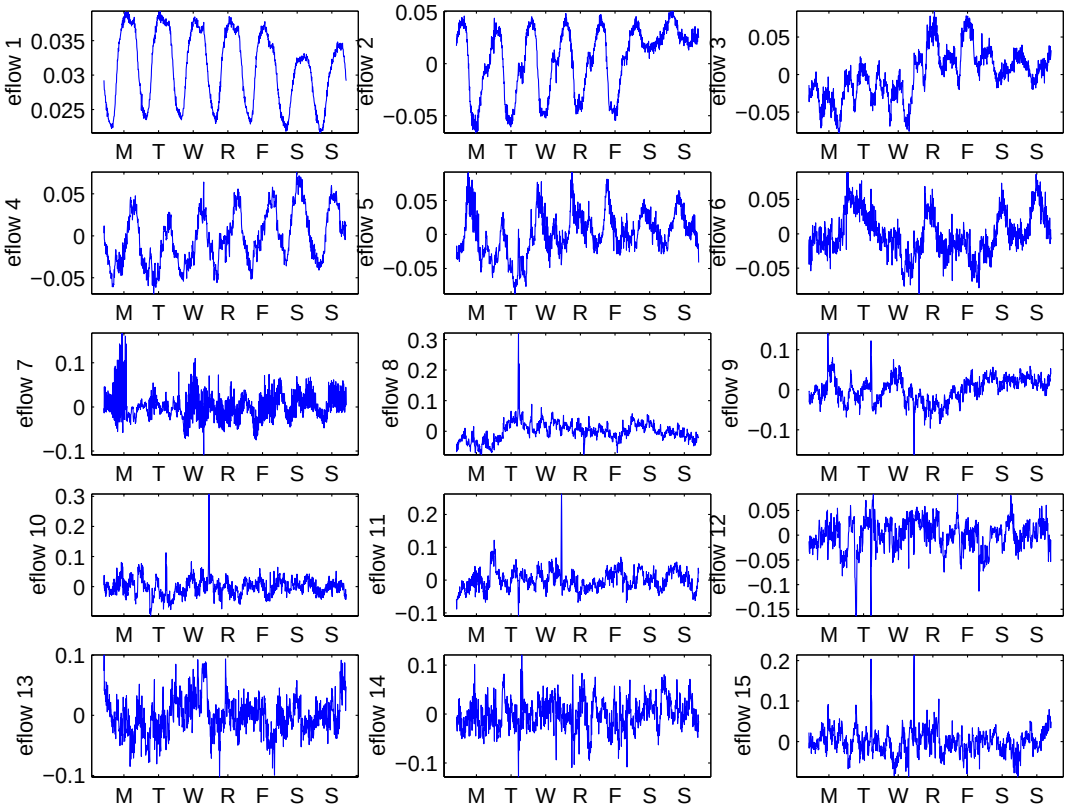
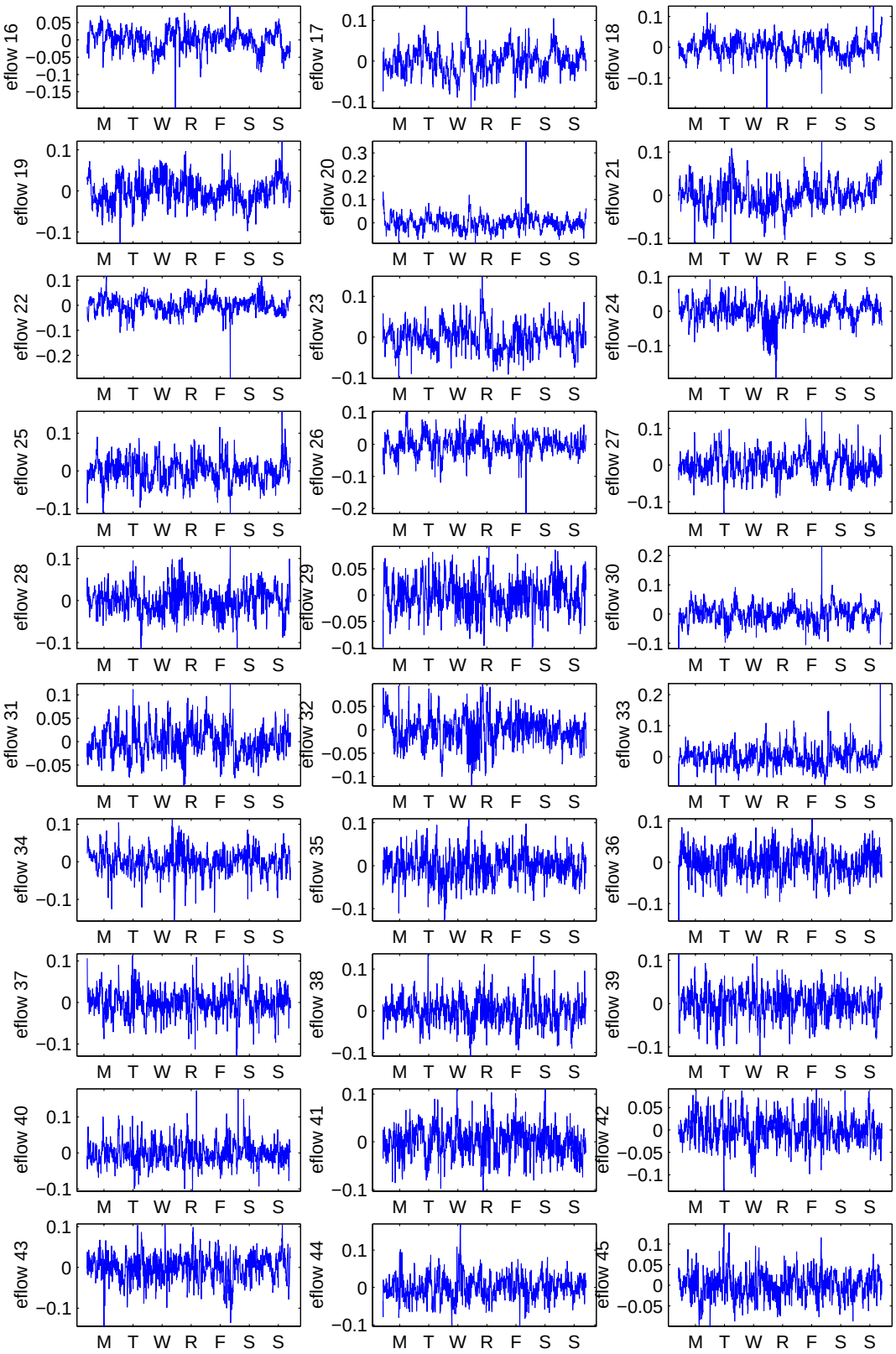
2 Eigenflows

In this section, we first present all the 169 eigenflows from the Sprint-1 dataset. Following this, we present the entire set of 121 eigenflows from the Abilene dataset.

2.1 Sprint-1

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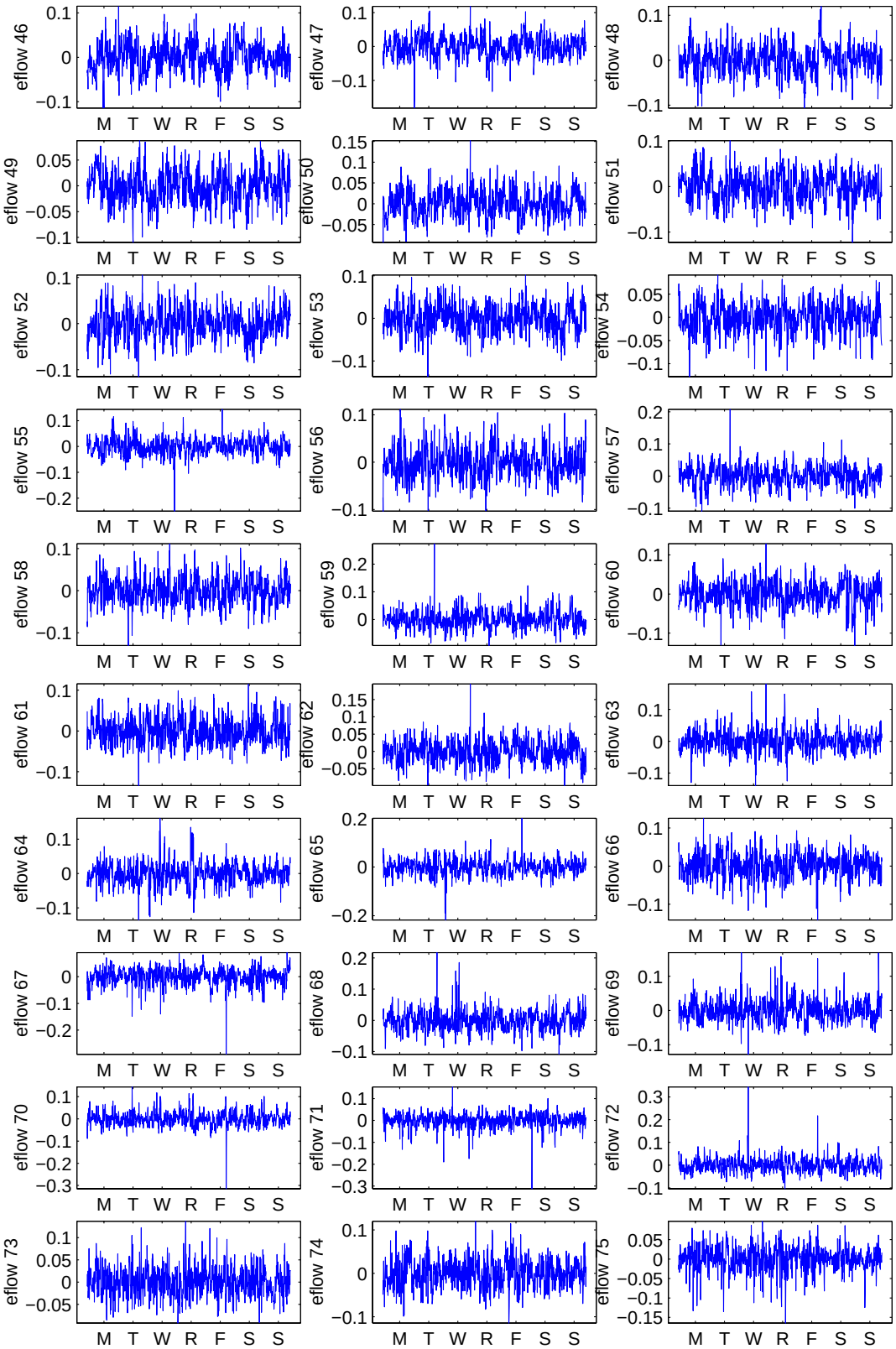
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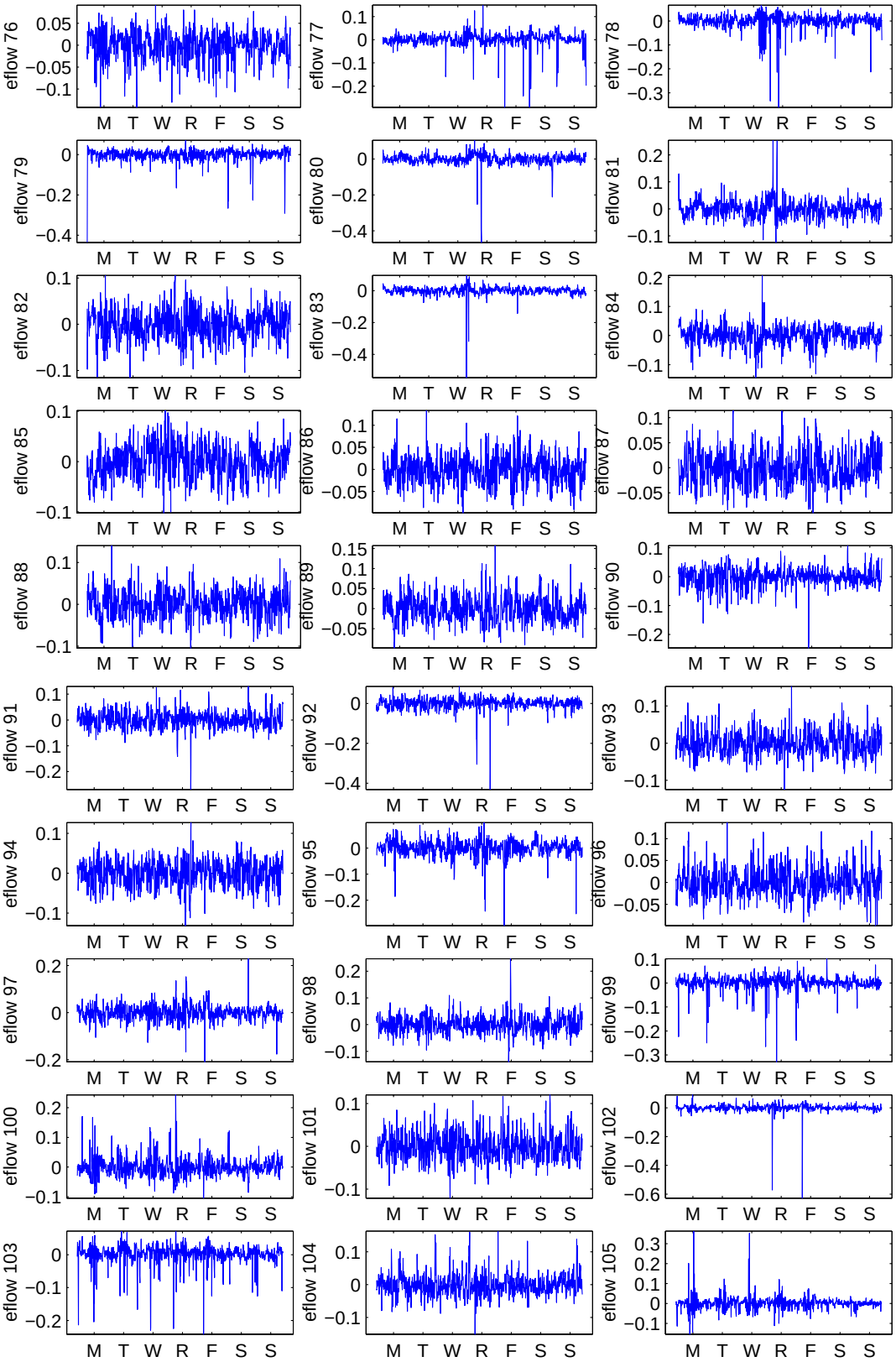
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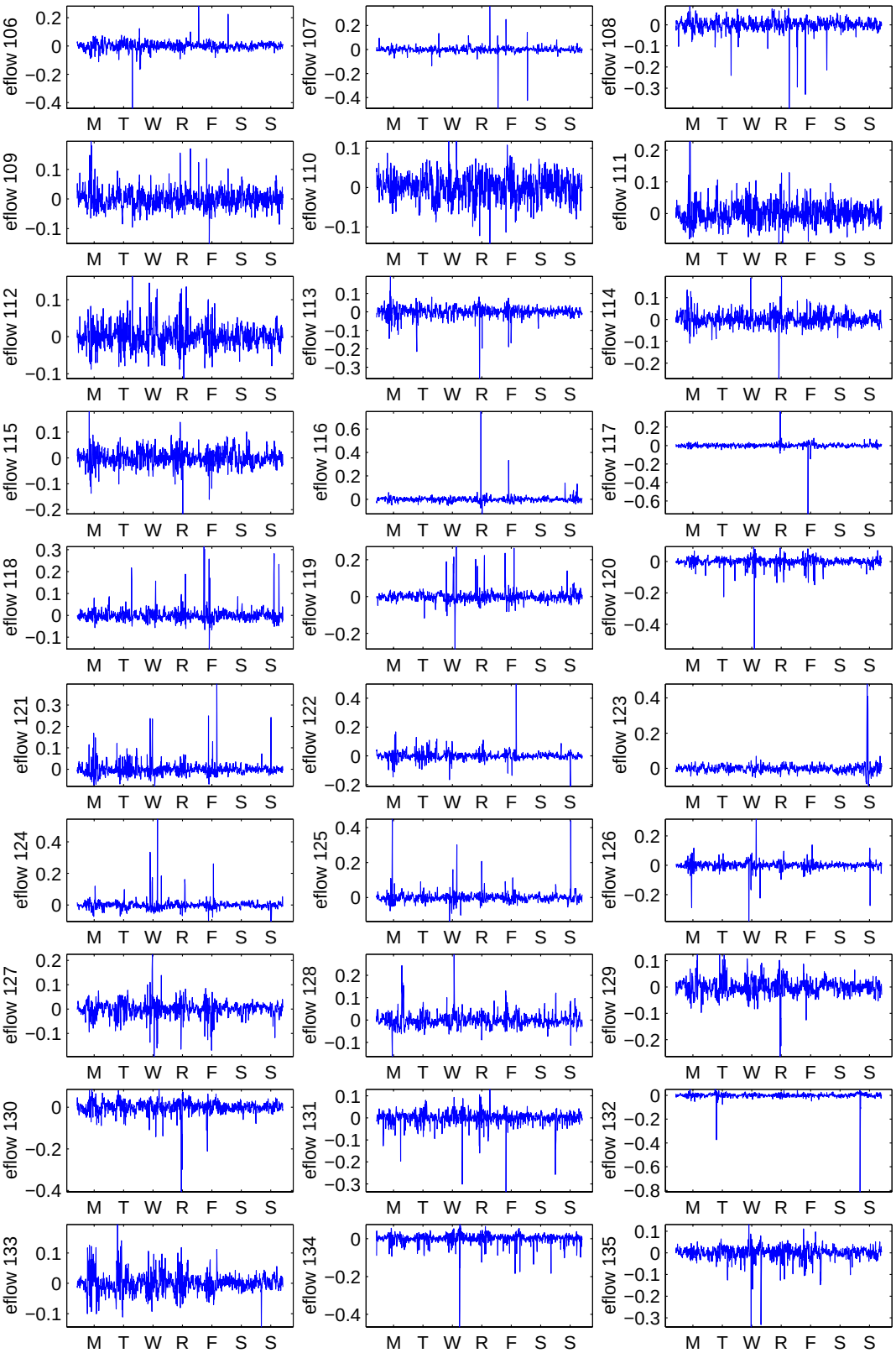
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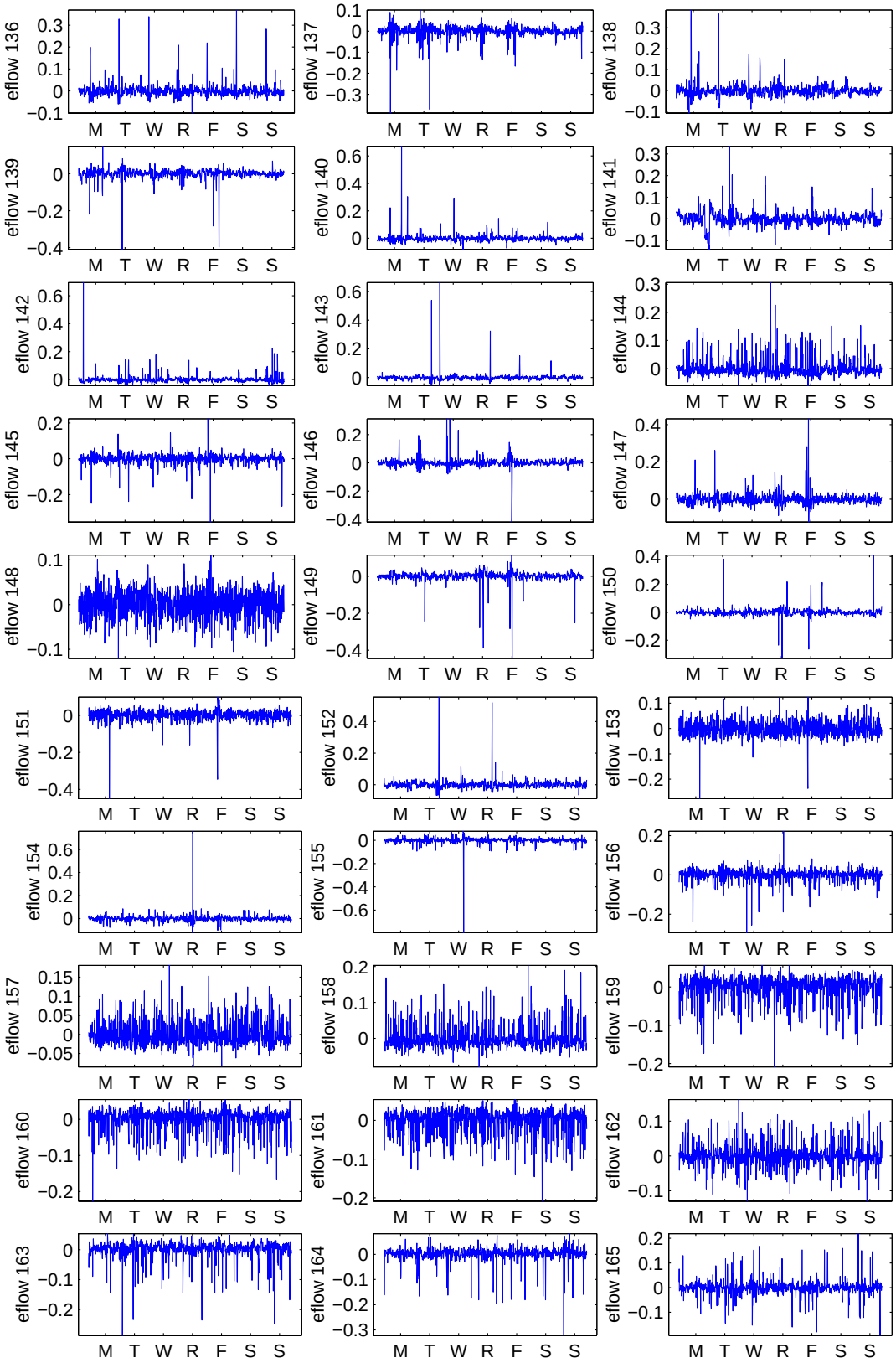
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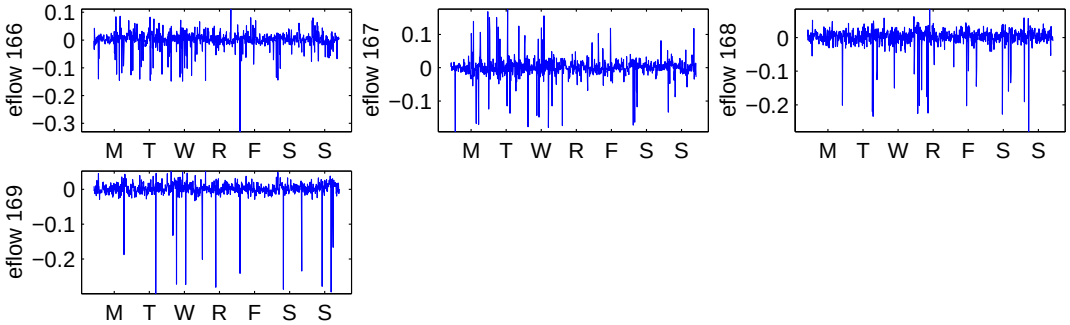
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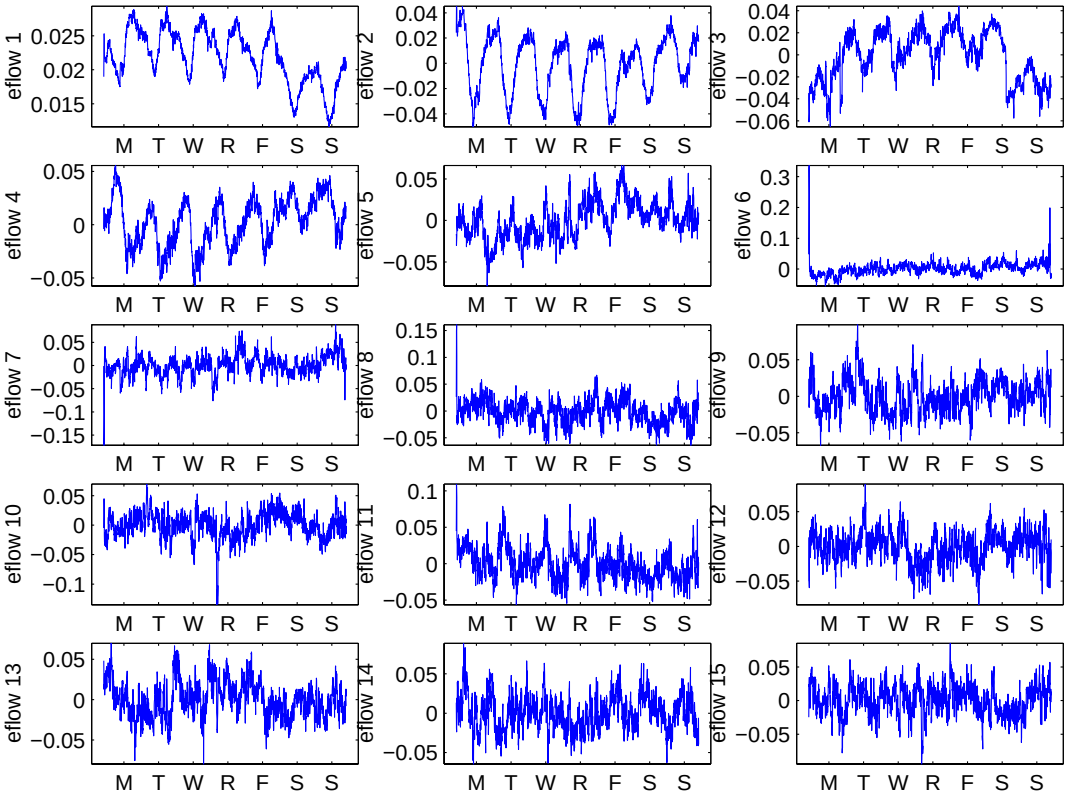
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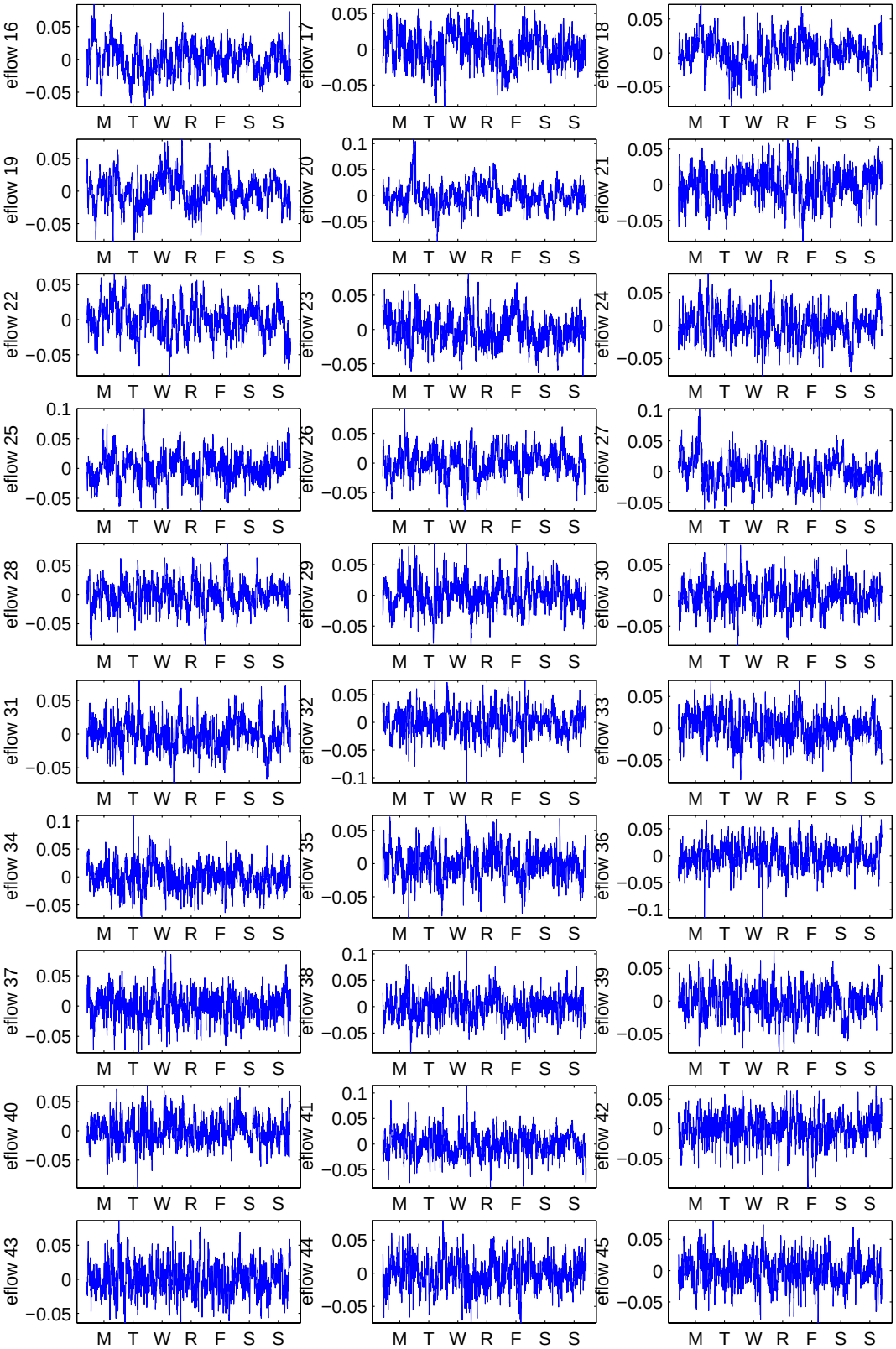
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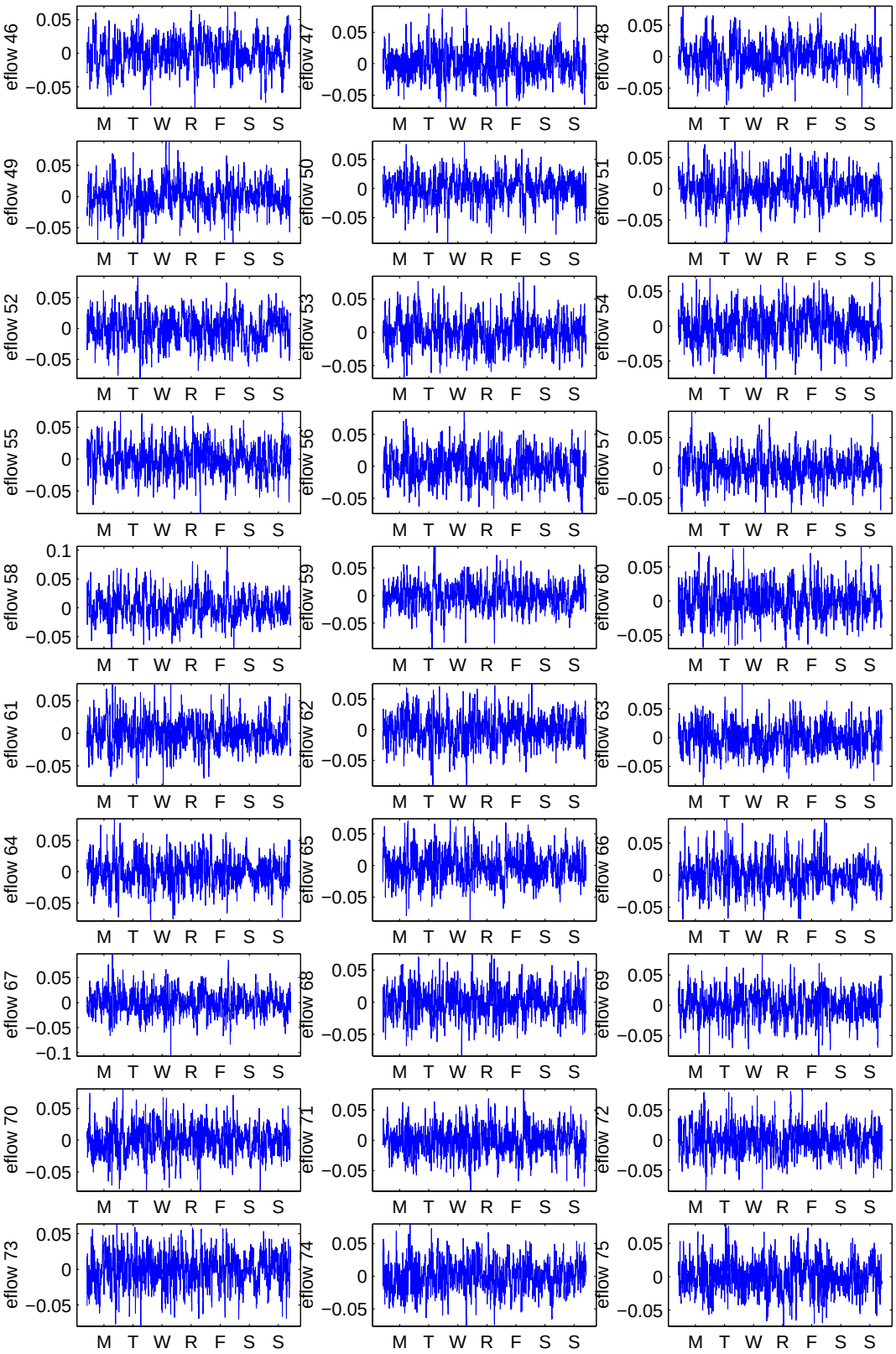
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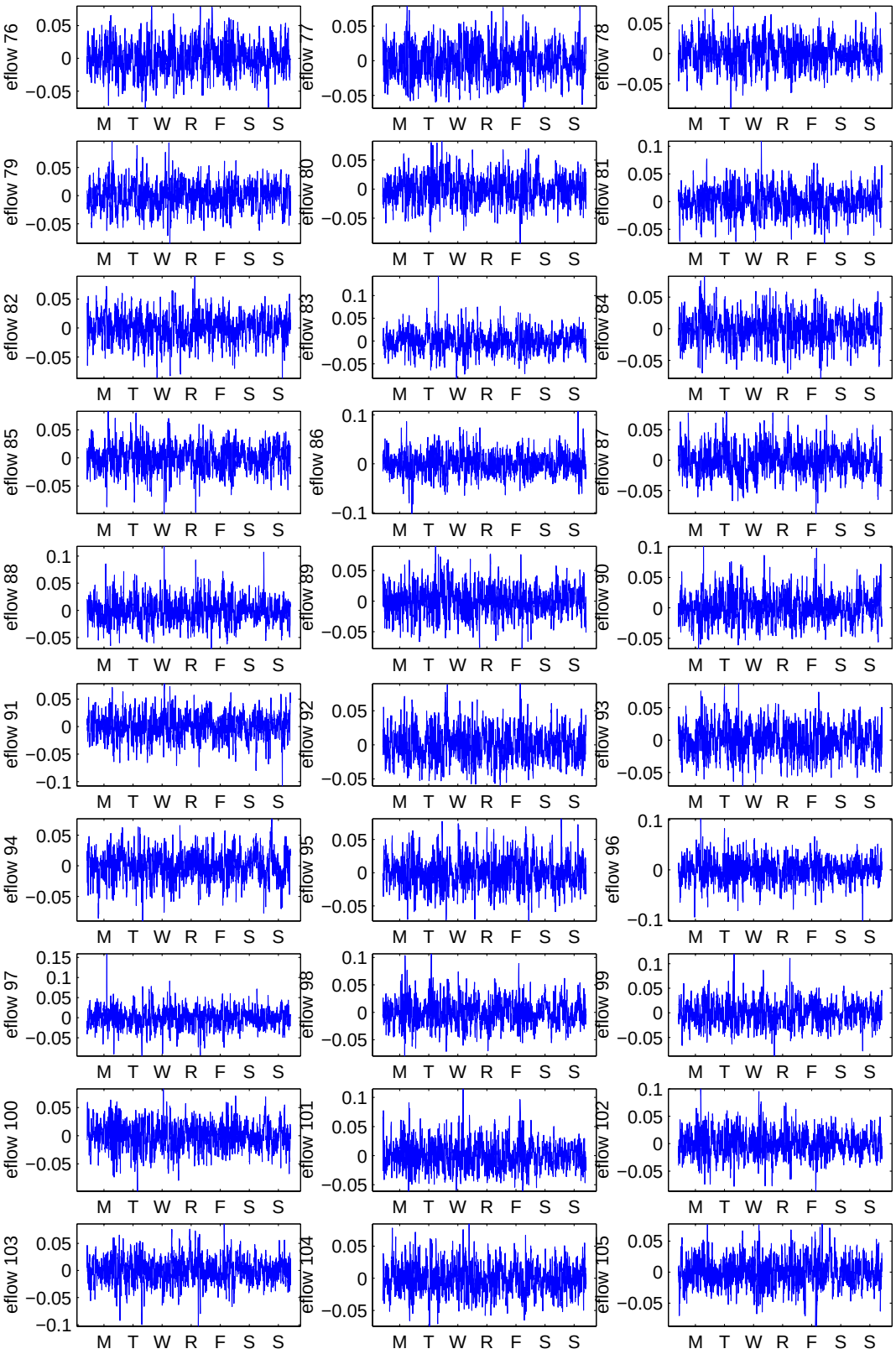
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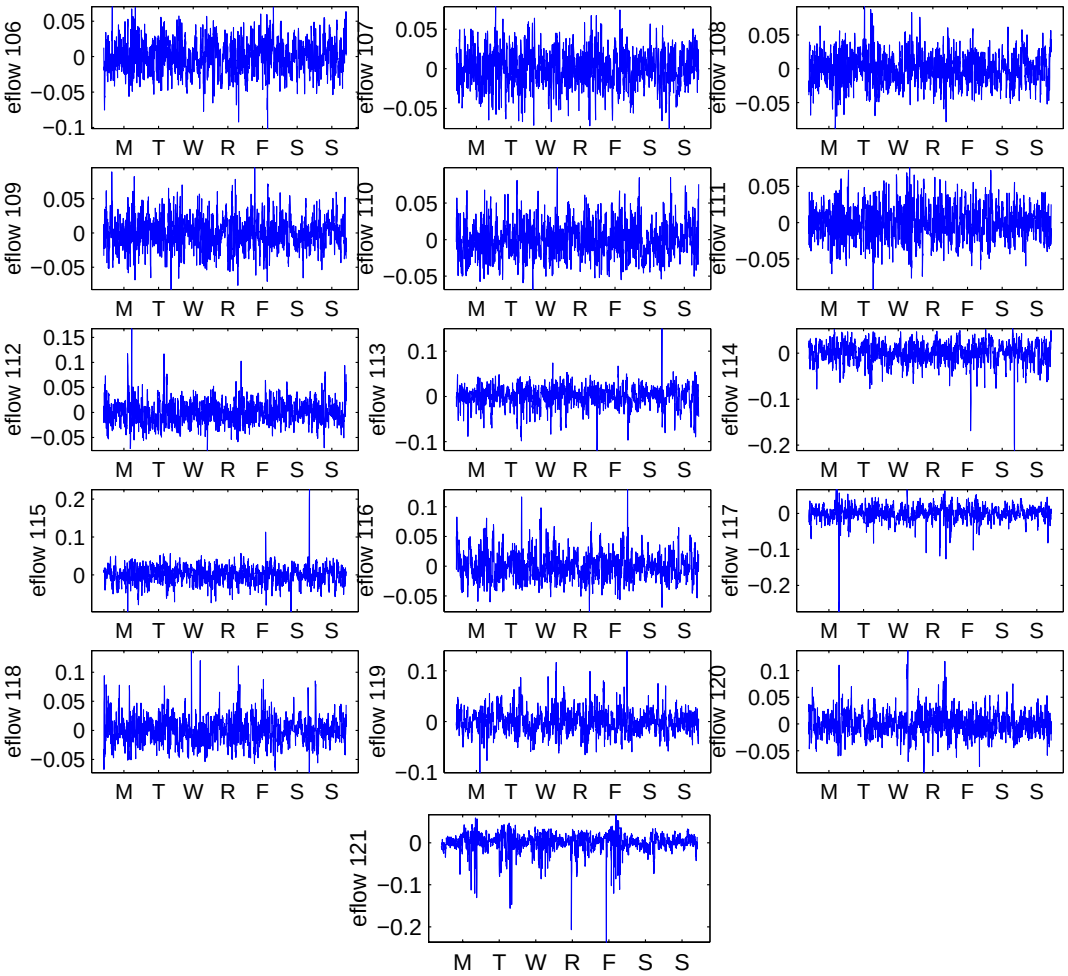
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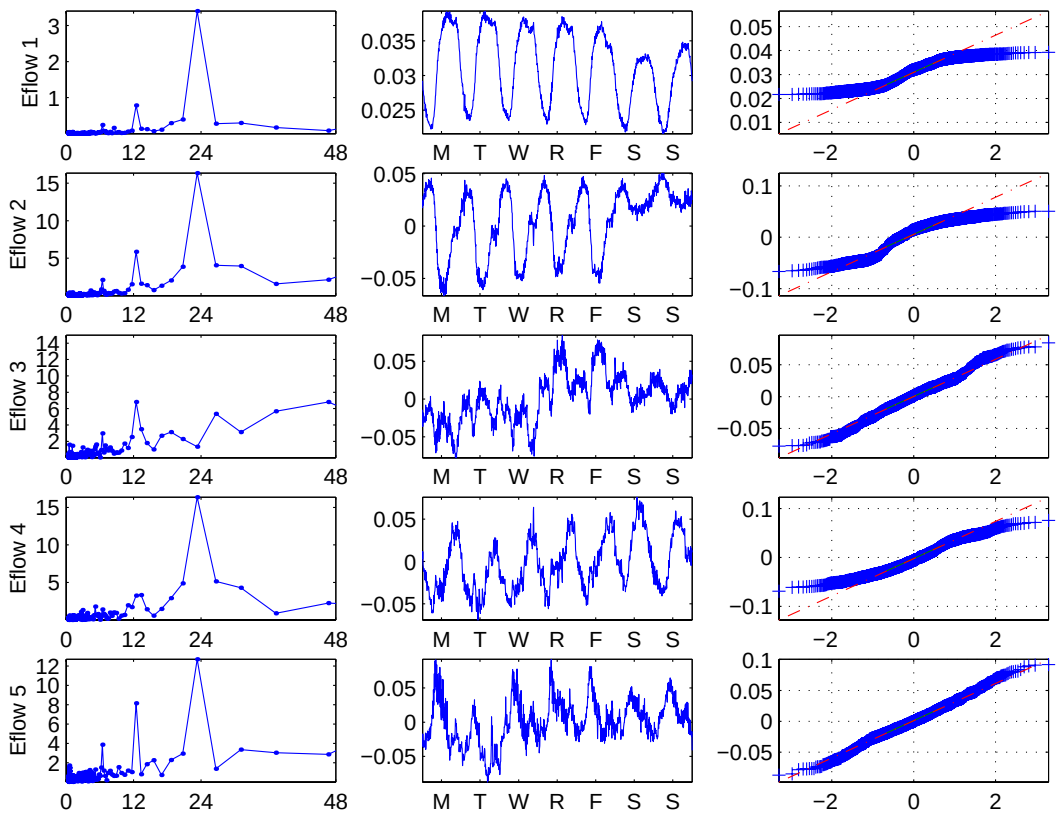
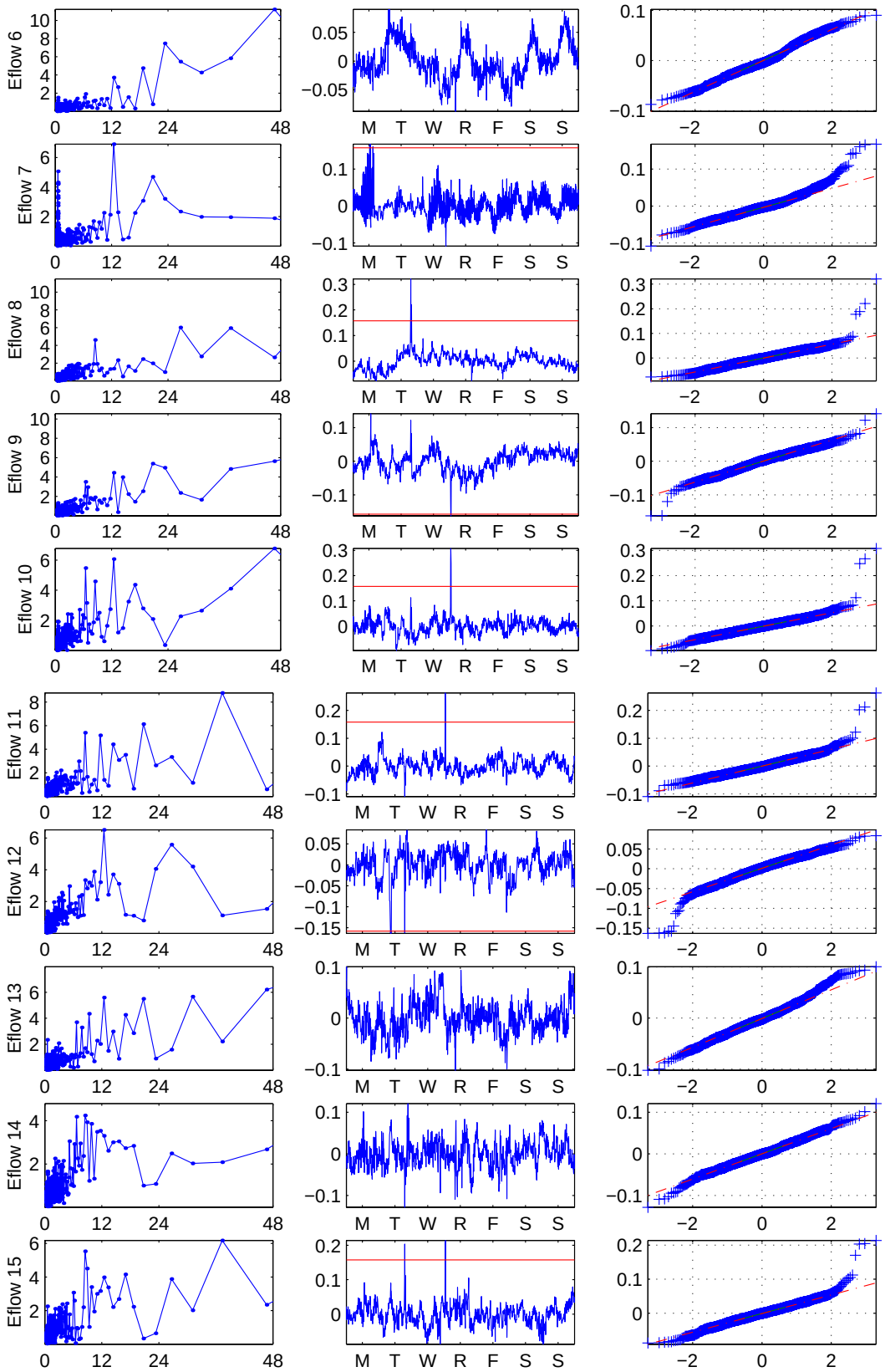
3 Classifying Eigenflows

In this section, we present the results of the procedure detailed in our original paper for classifying eigenflows. For all the 169 and 121 eigenflows from the Sprint-1 and Abilene datasets respectively, we plot (a) Fourier Frequency, (b) 5 σ threshold and (c) QQplot. Recall that 99.9% of the total energy is captured by the first 50 and the first 90 eigenflows for Sprint-1 and Abilene respectively. However, here we present the entire set of eigenflows from both datasets, for completeness. Note that the 5 σ threshold lines (in red) are only plotted if the treshold test is violated.

3.1 Sprint-1

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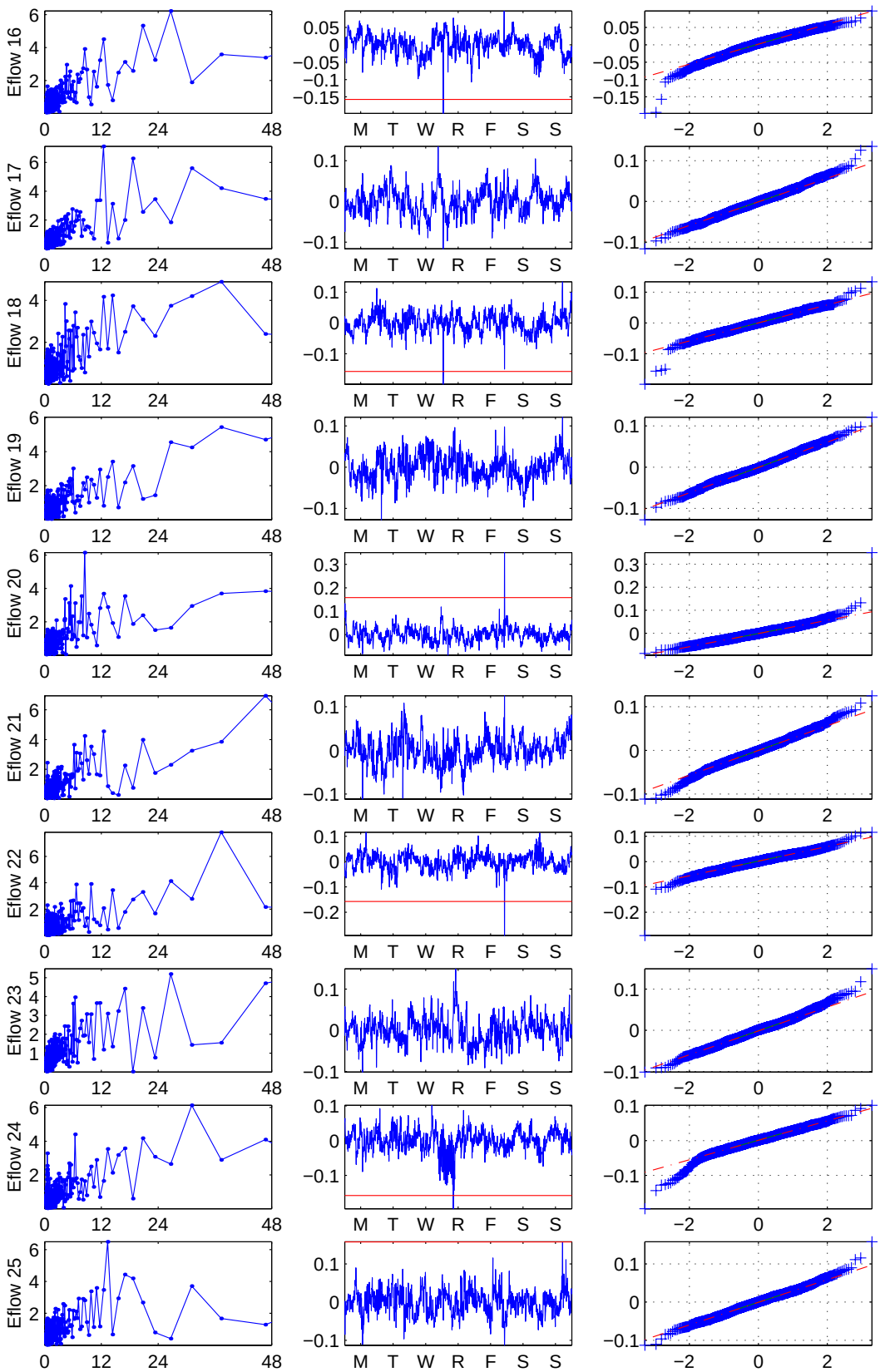
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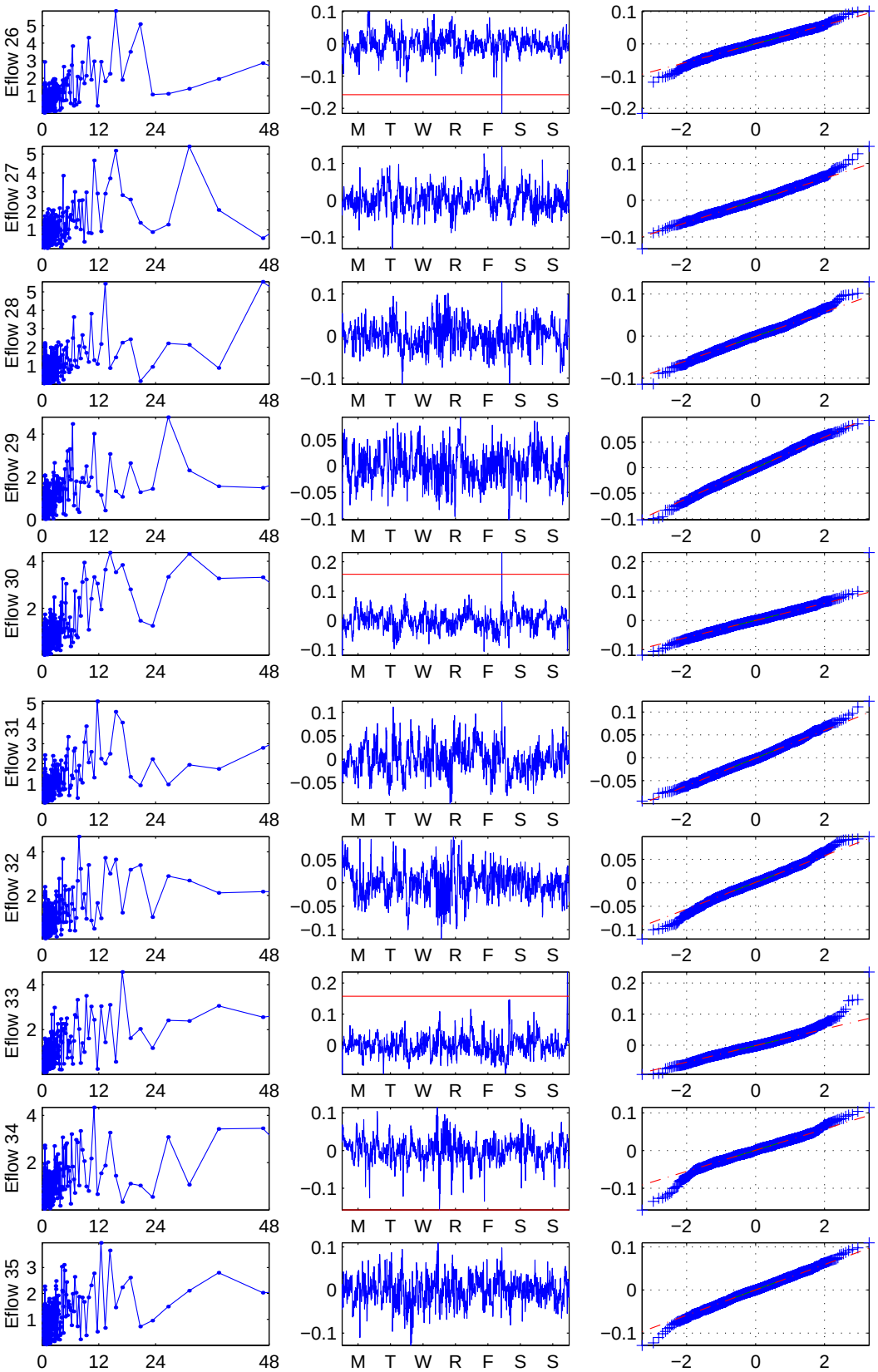
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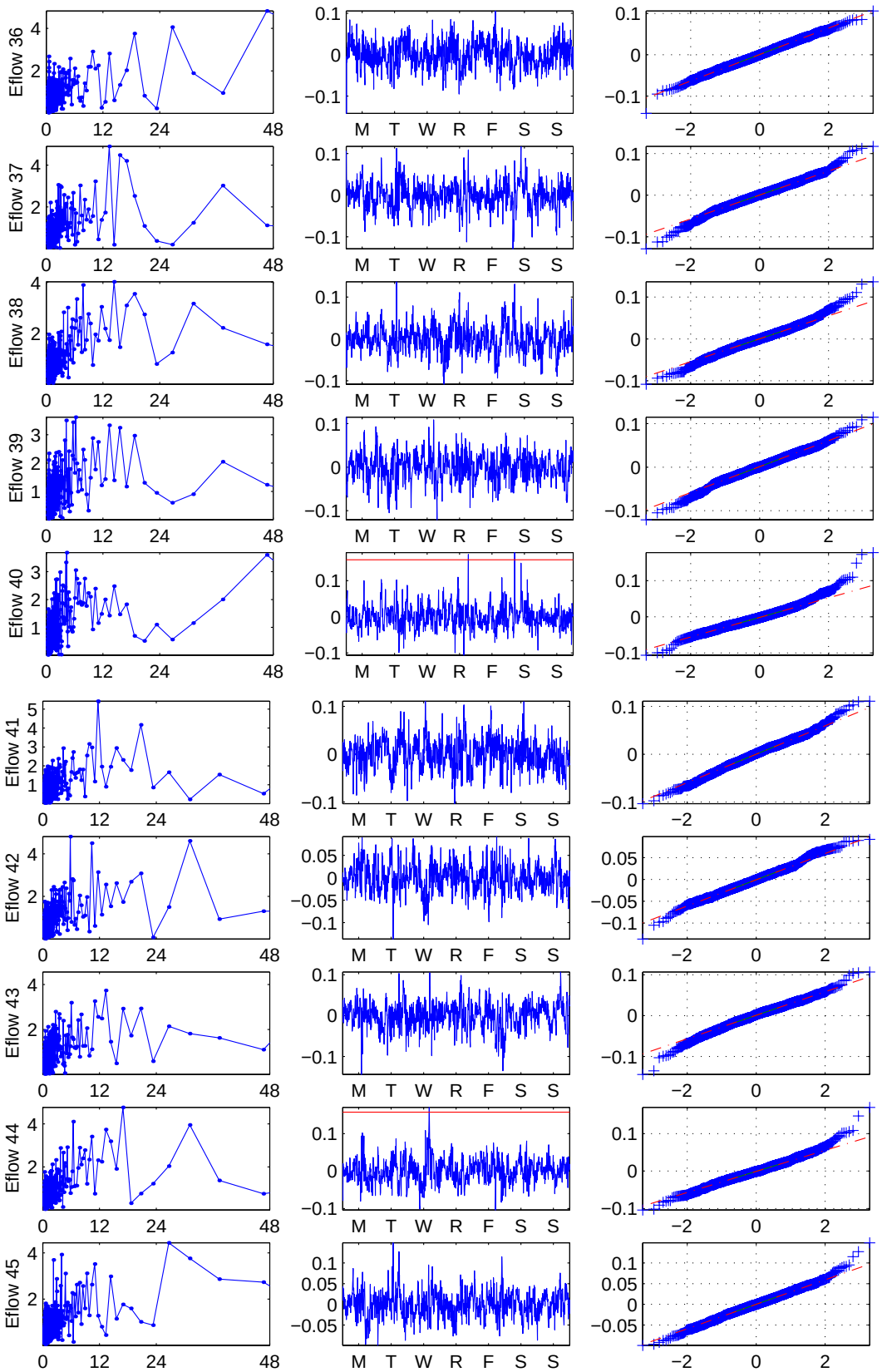
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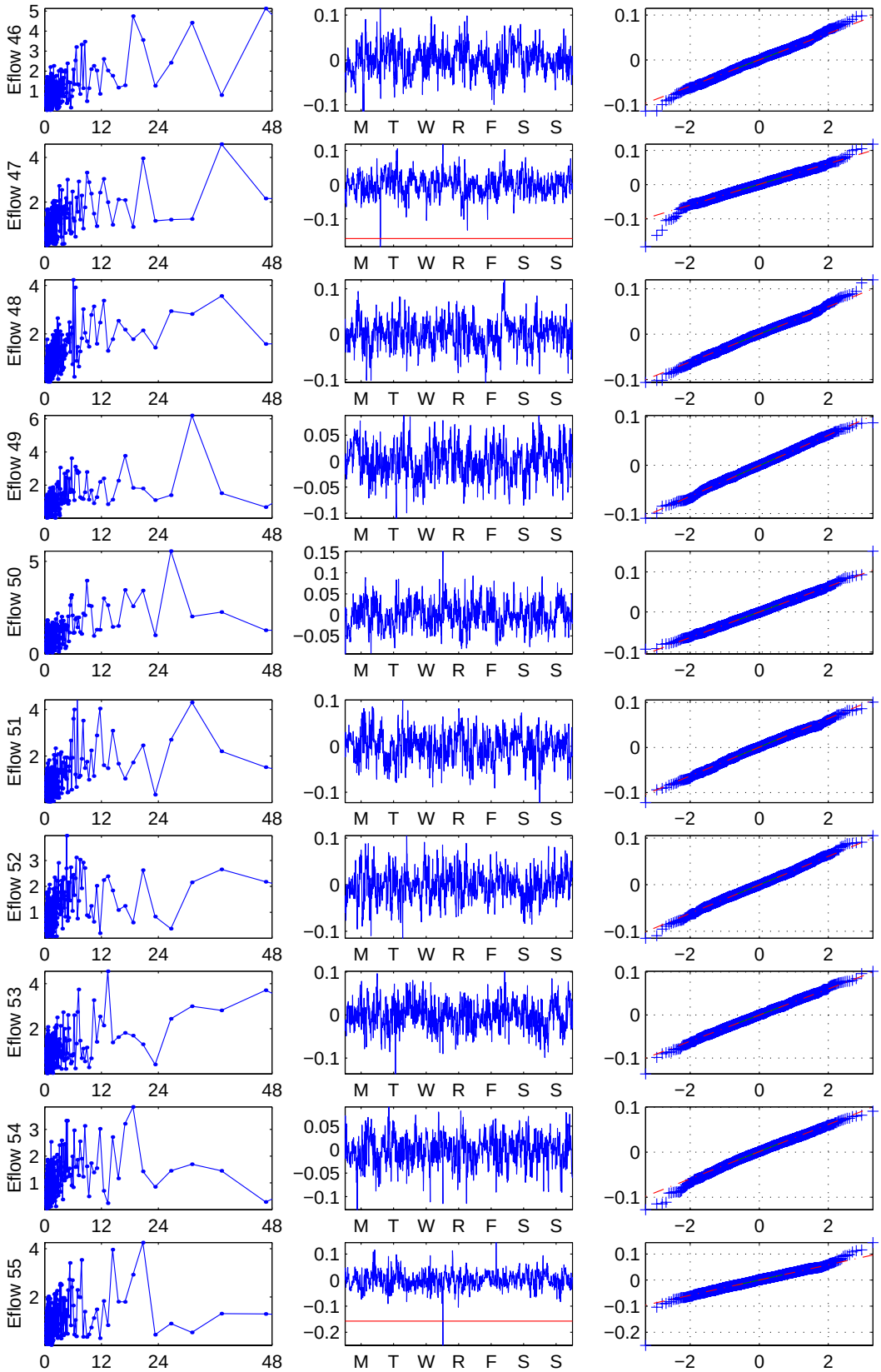
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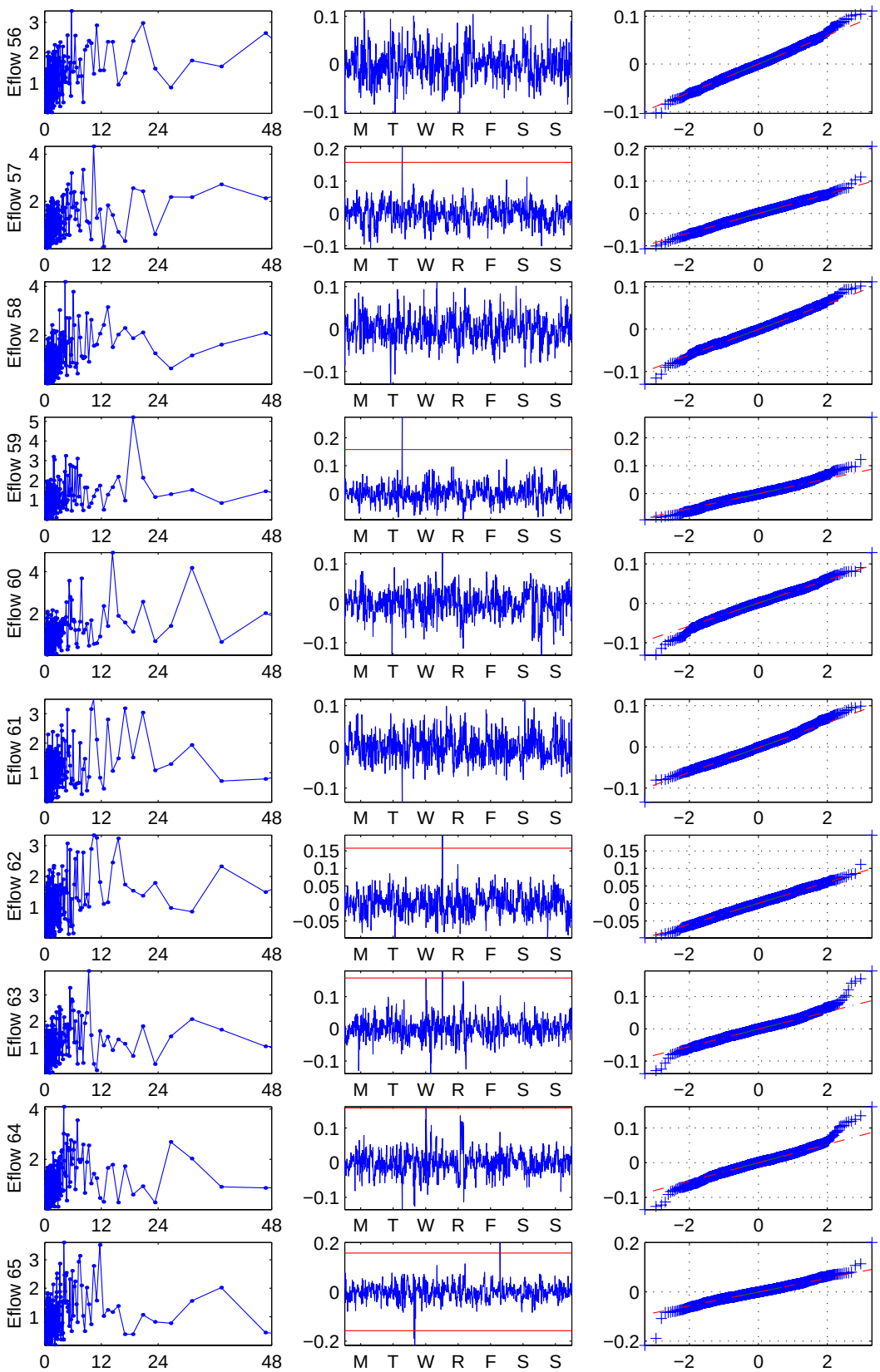
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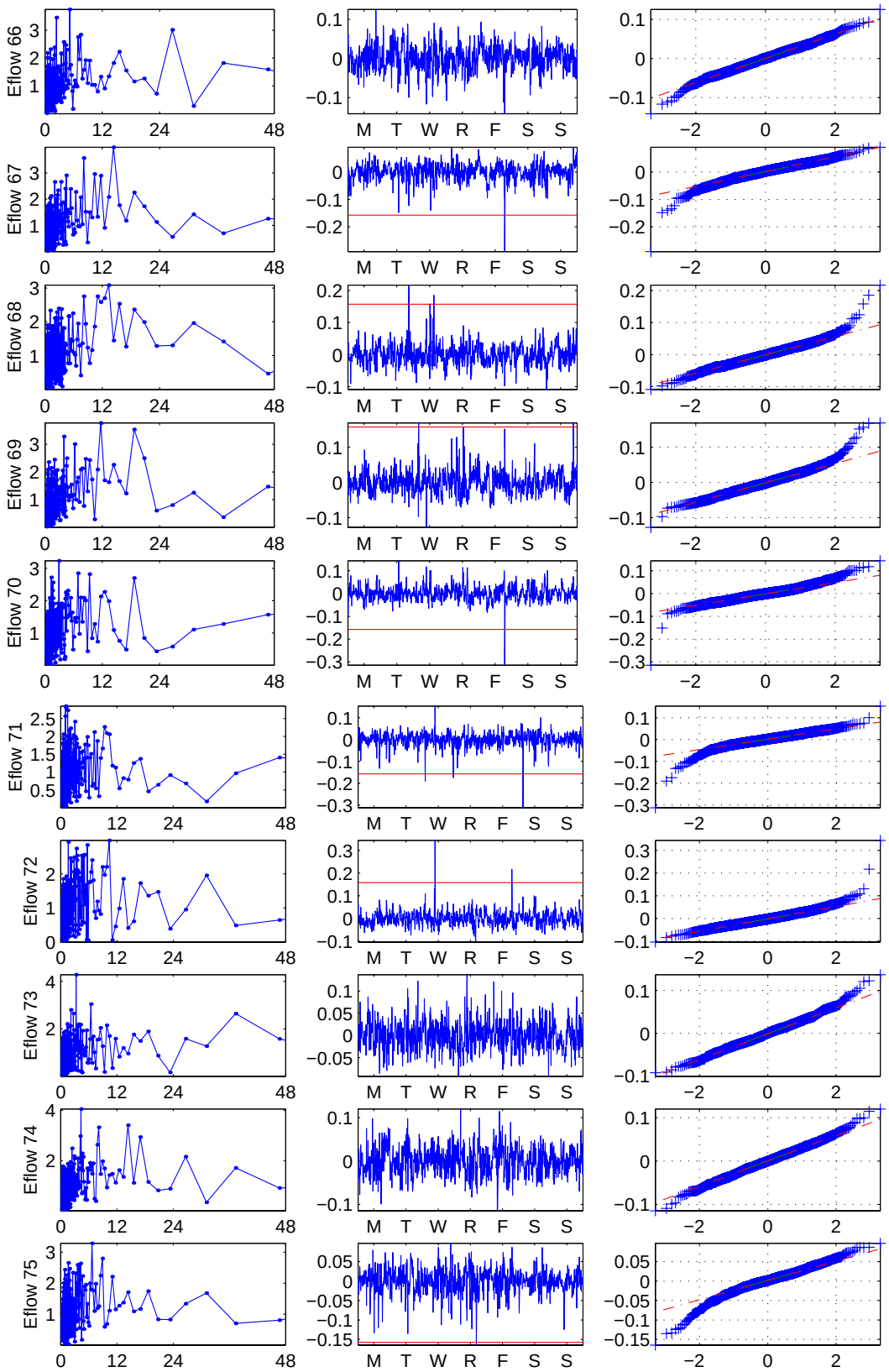
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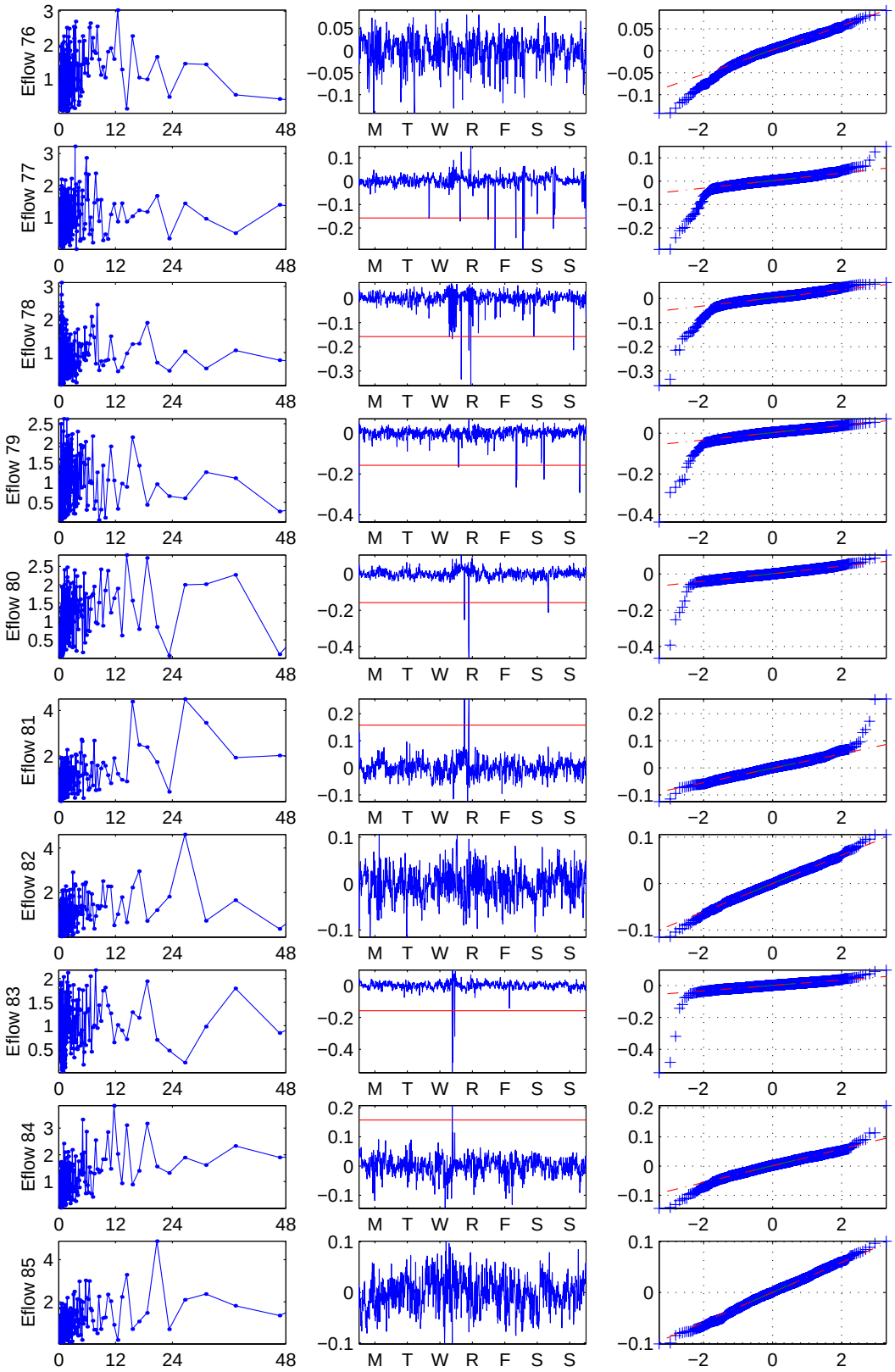
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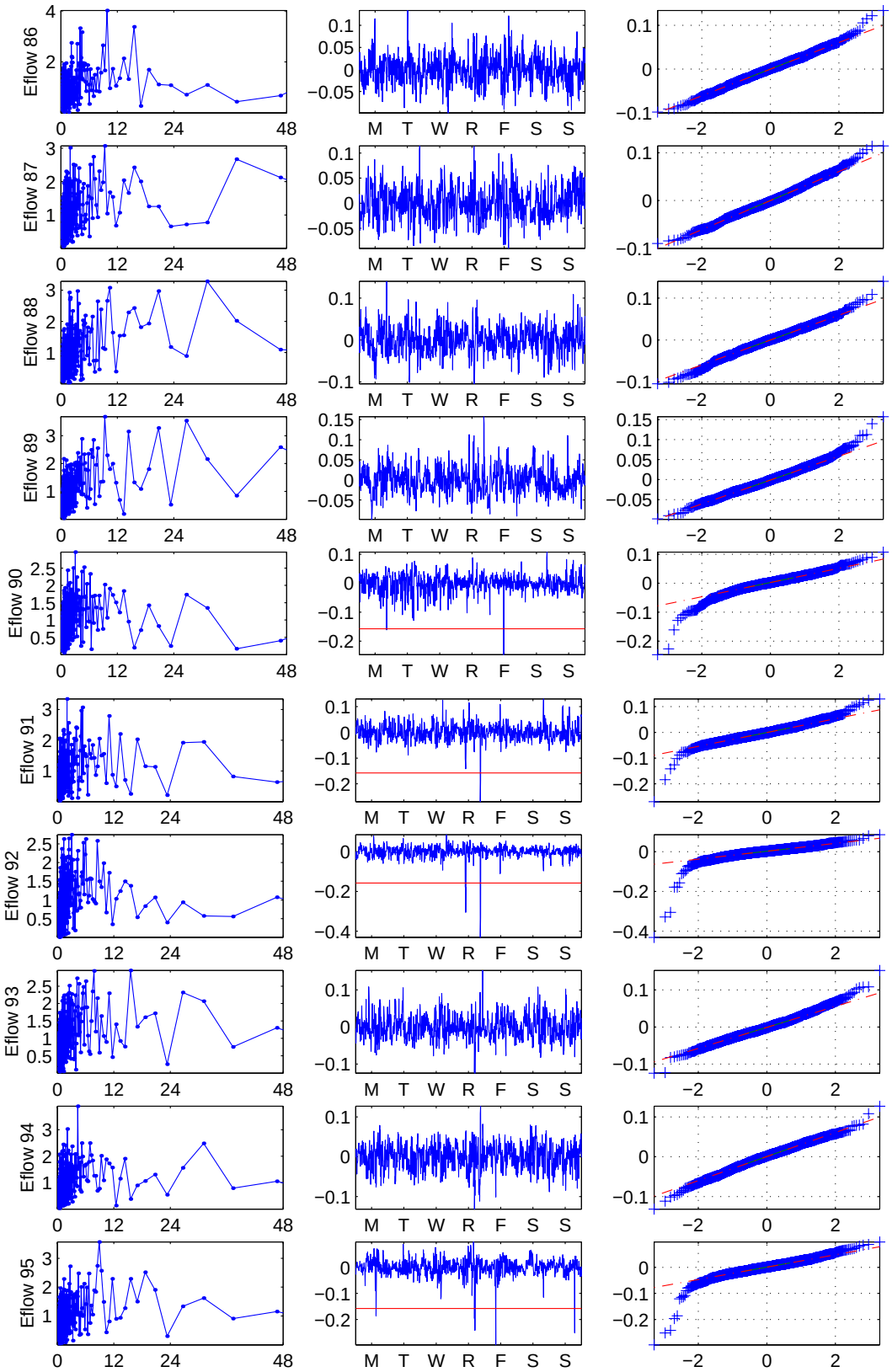
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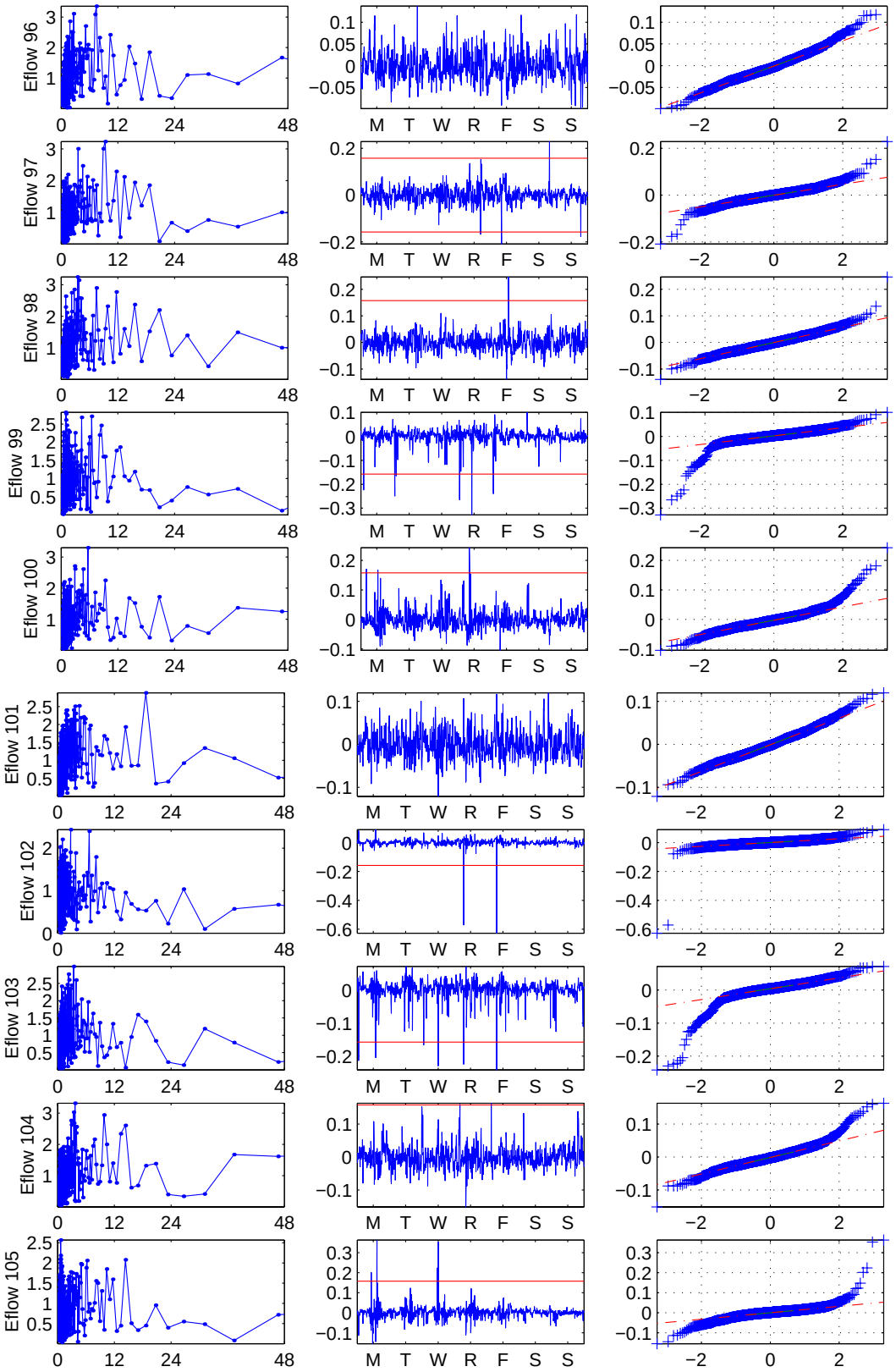
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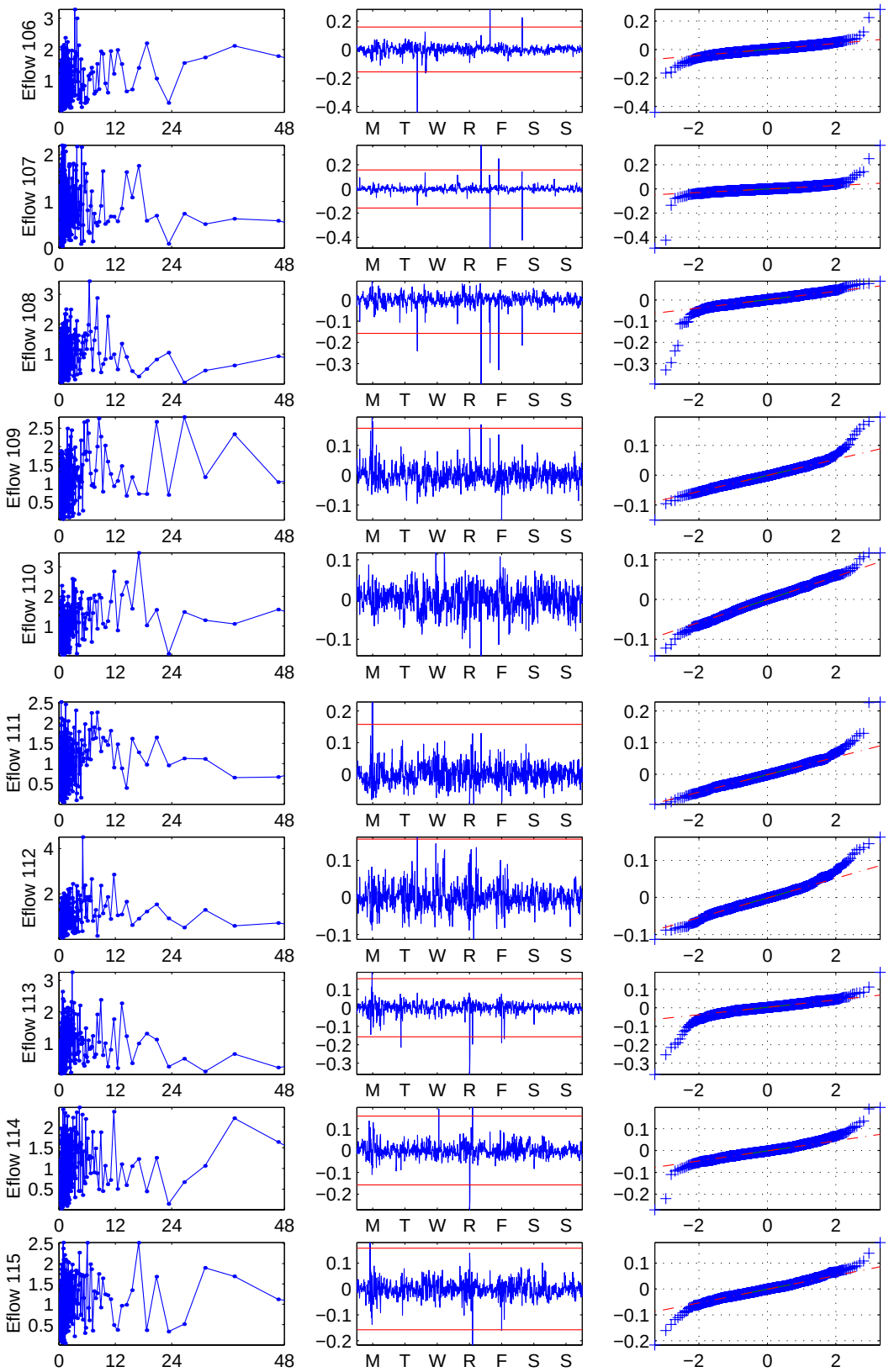
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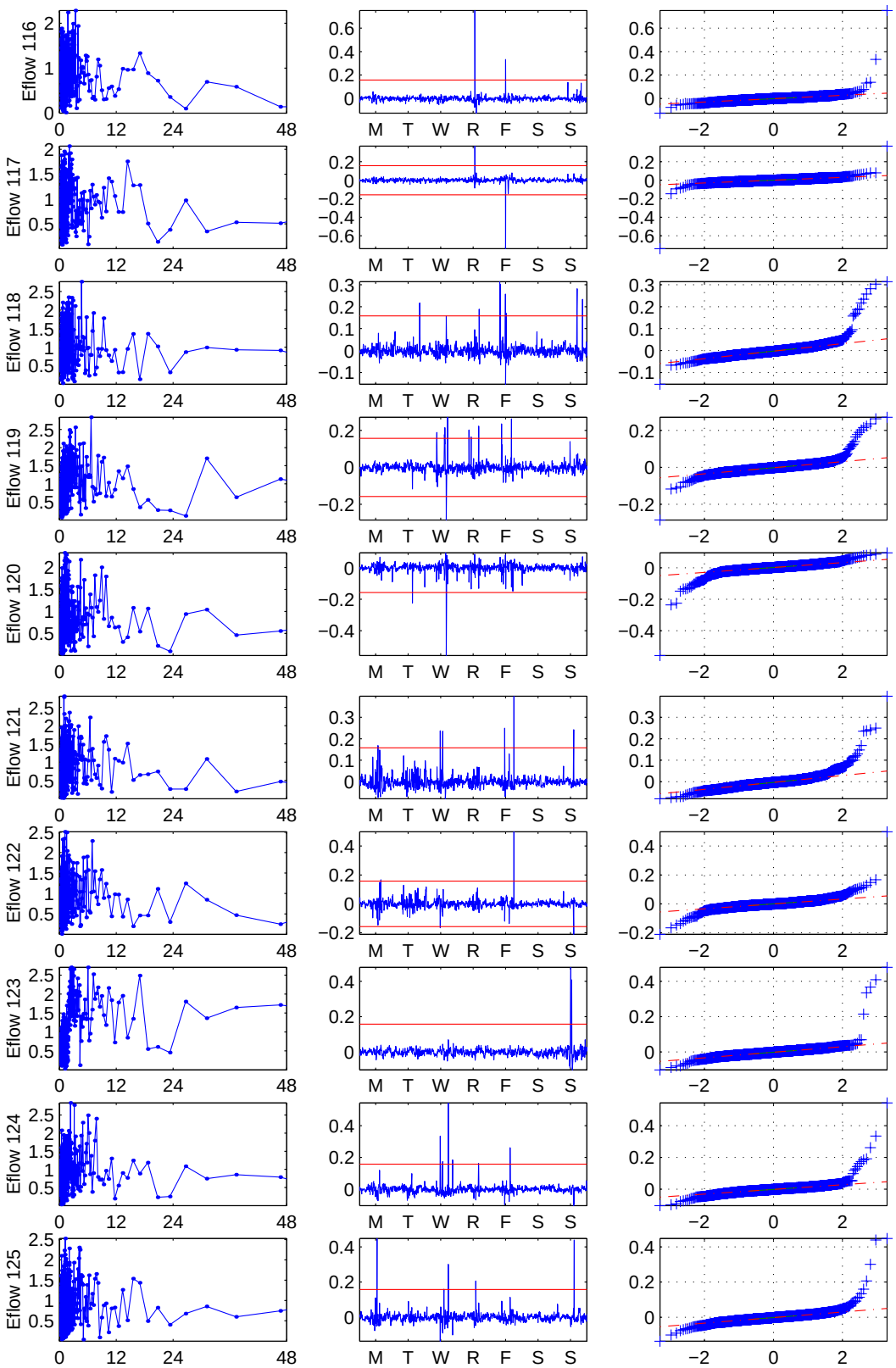
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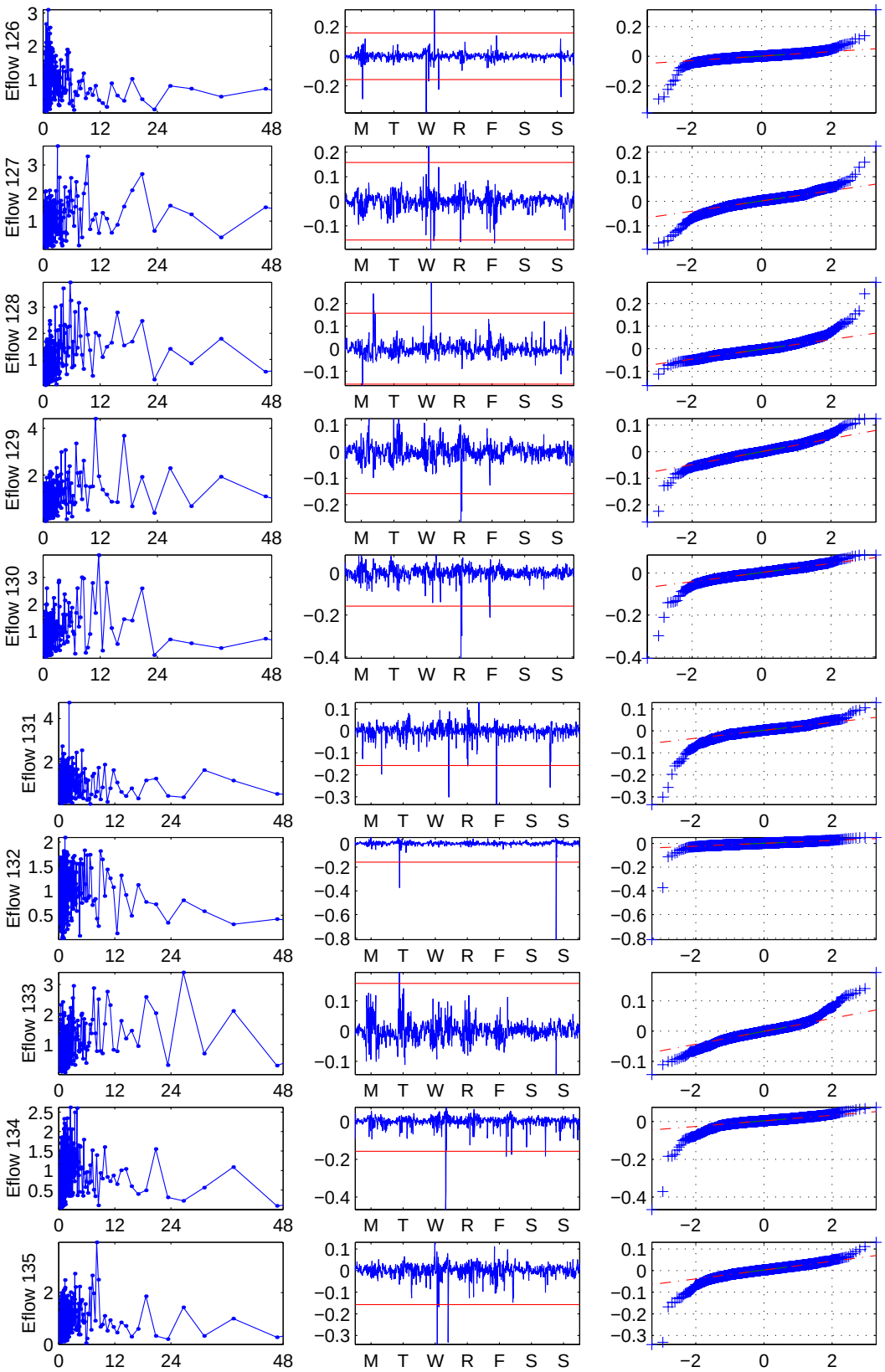
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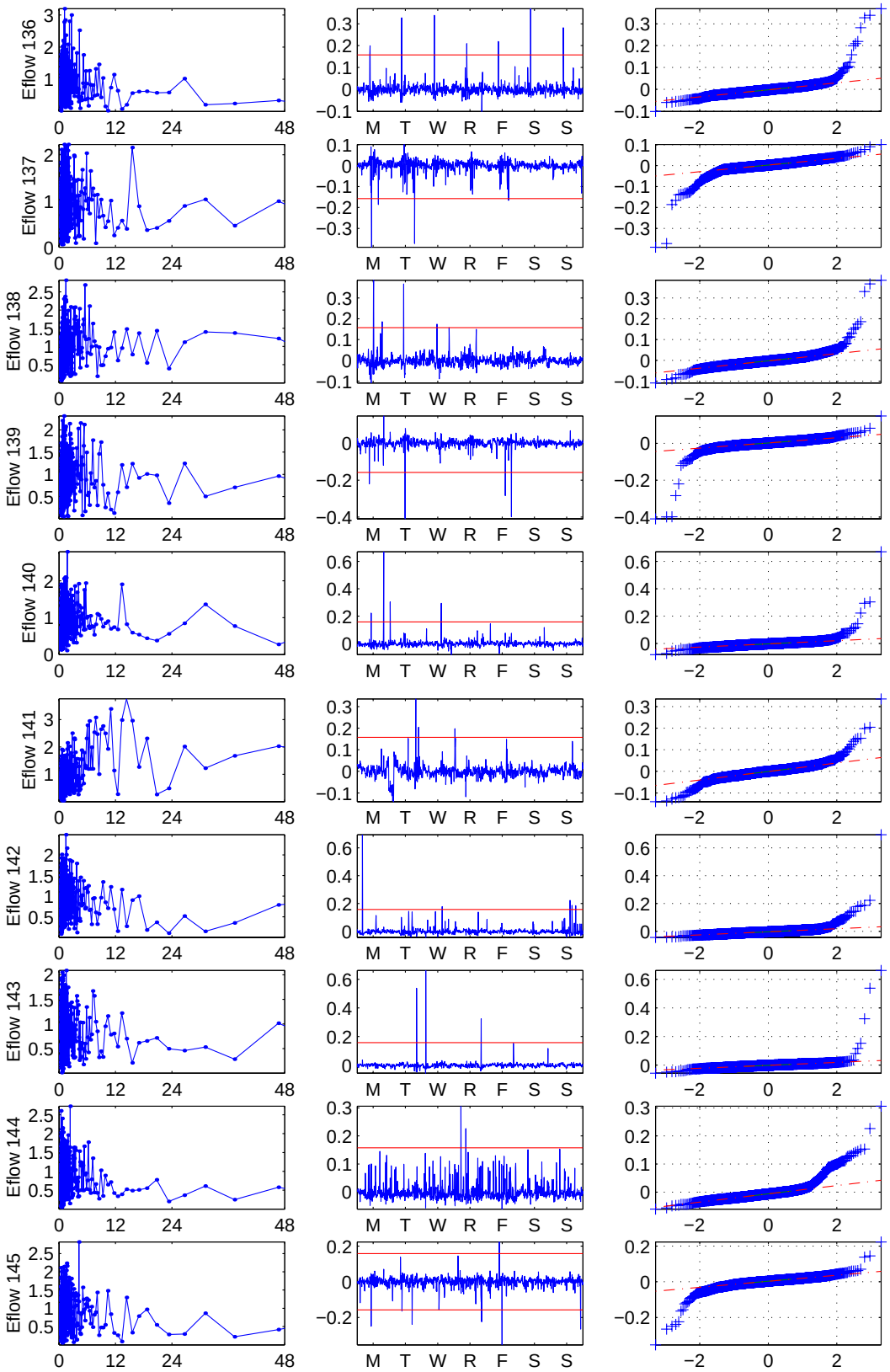
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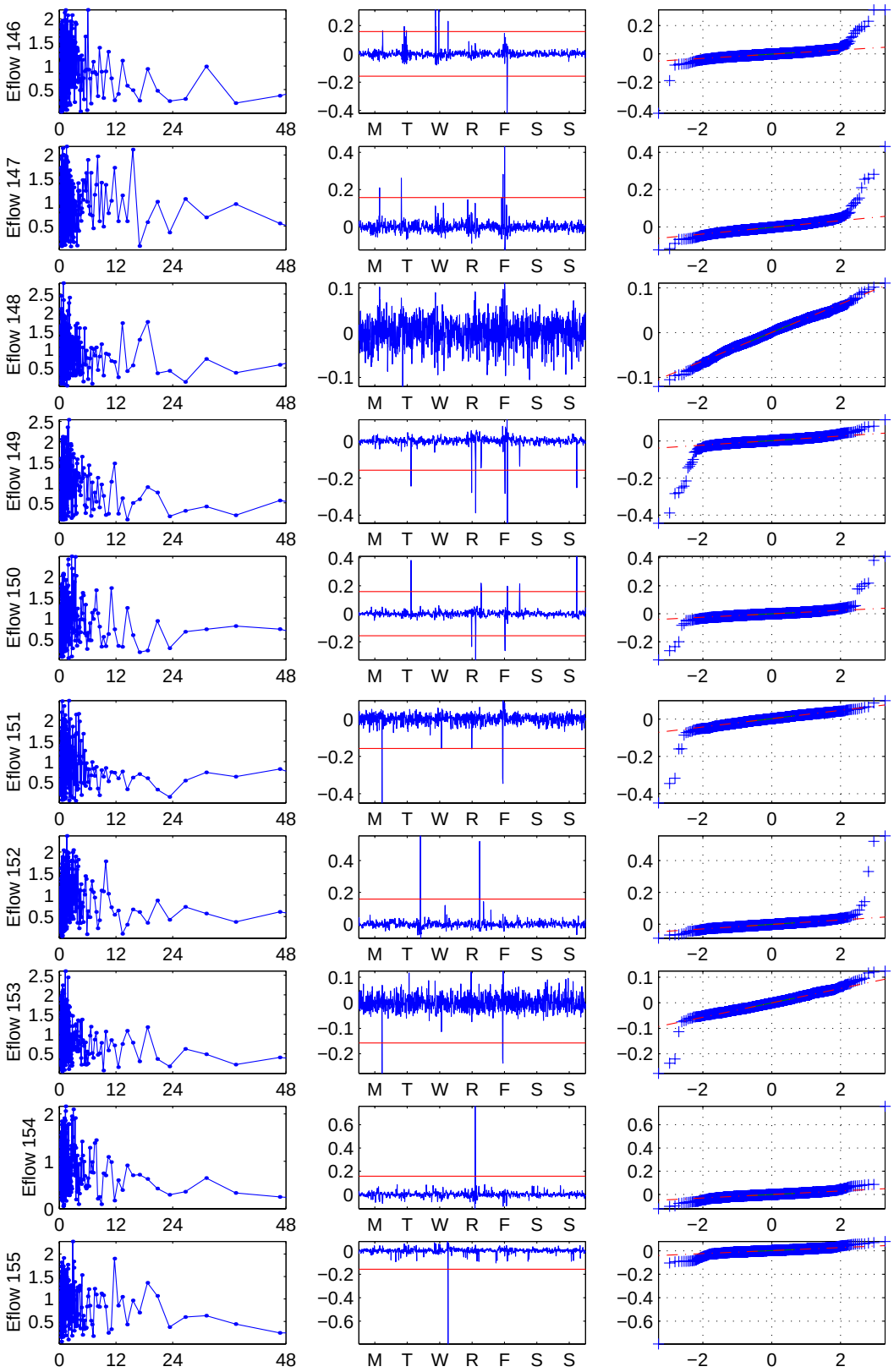
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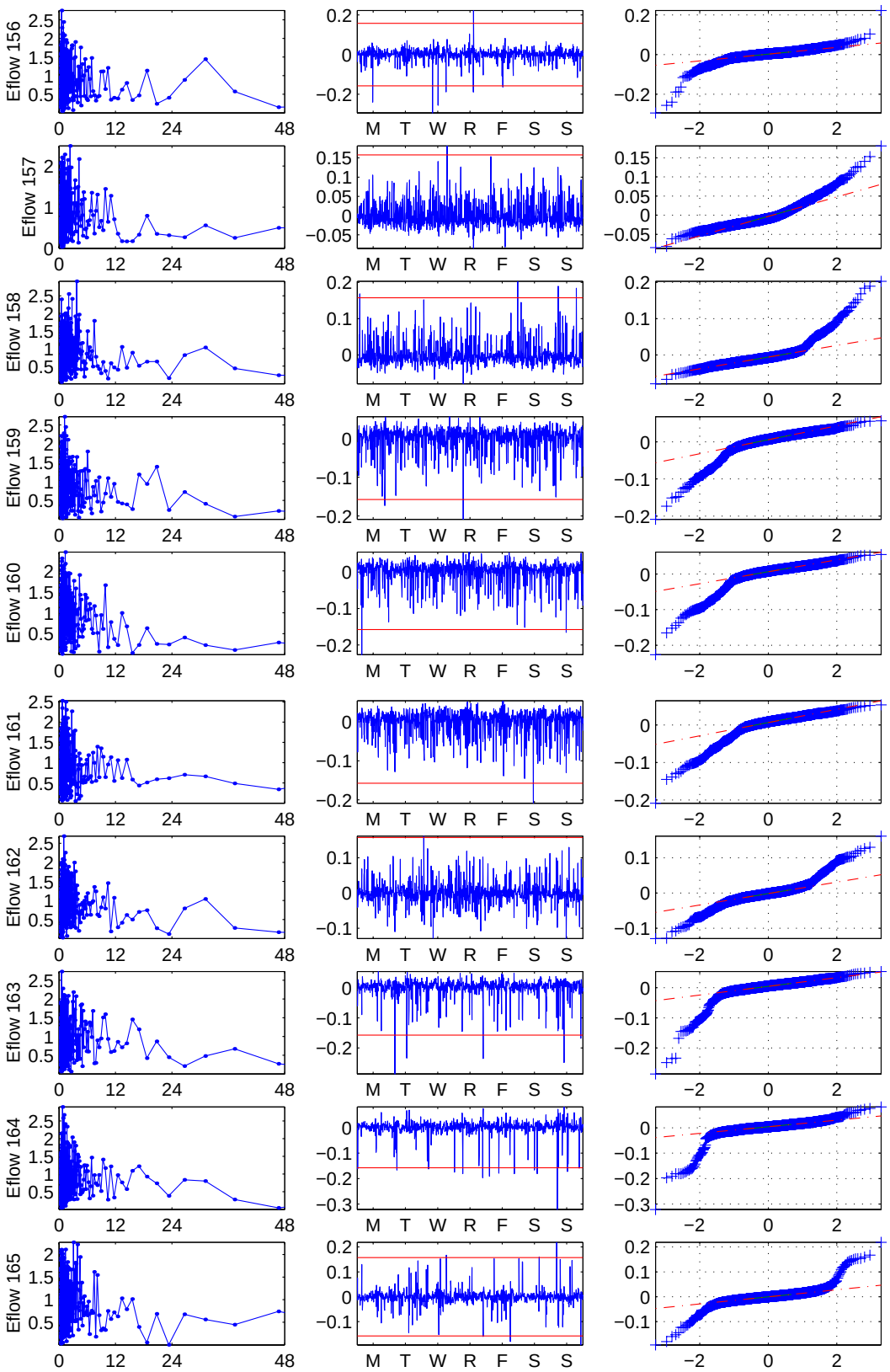
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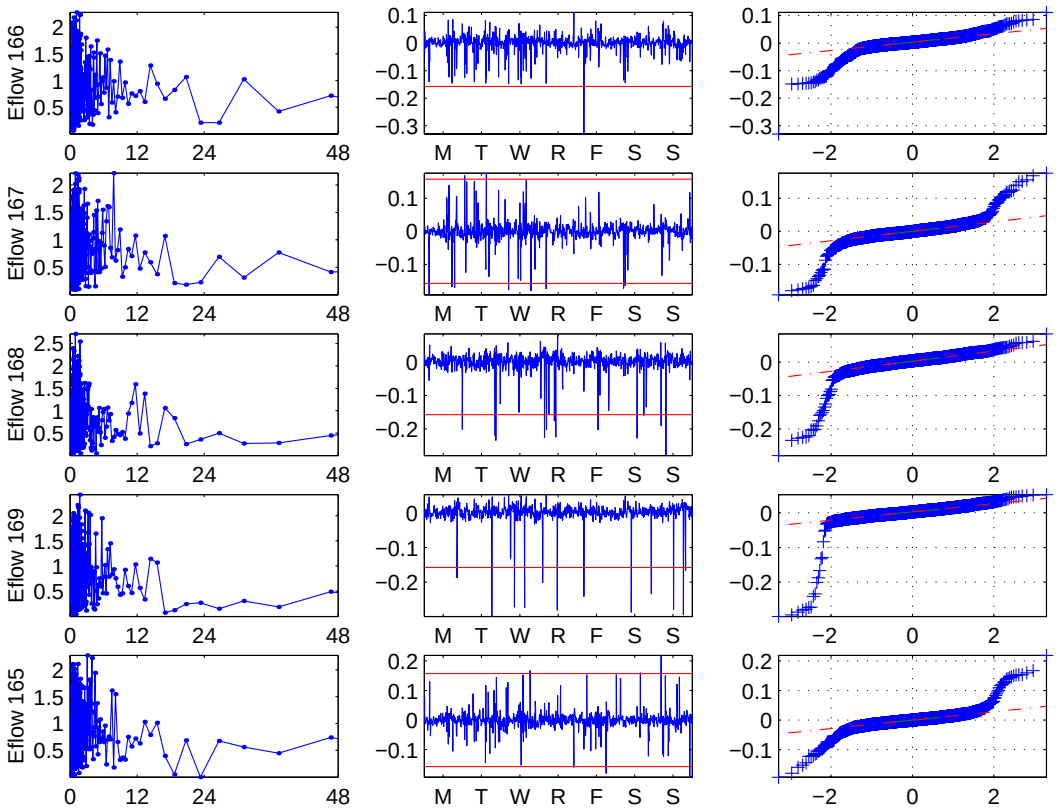
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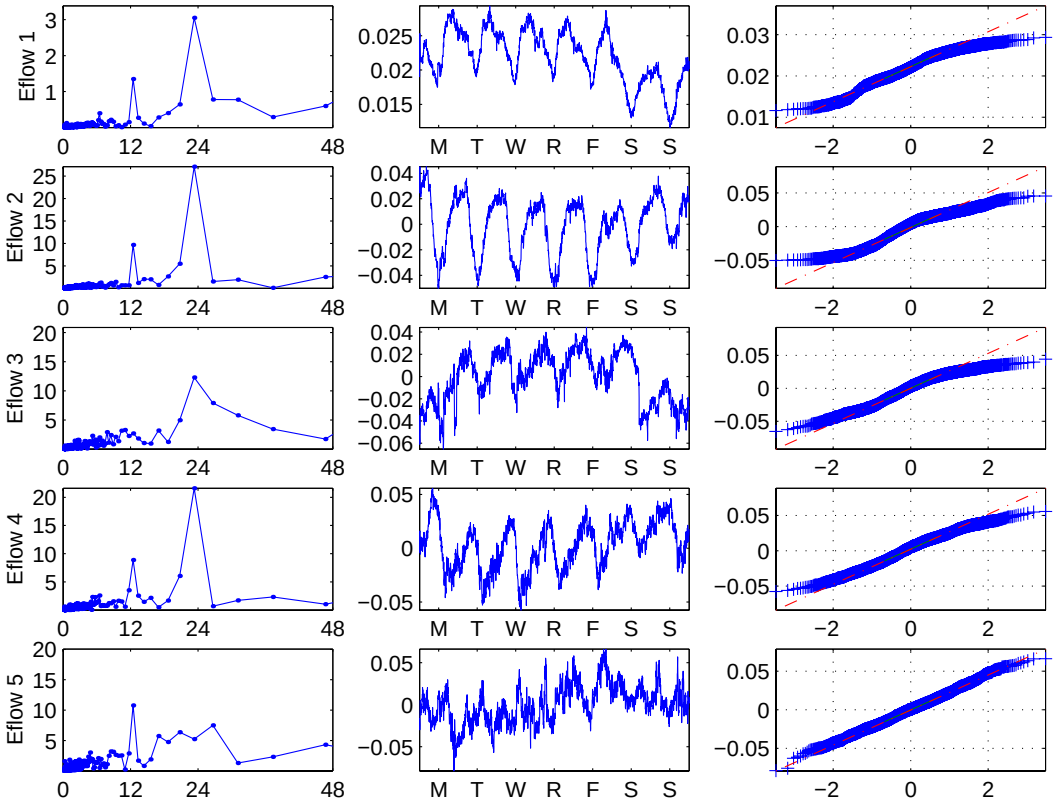

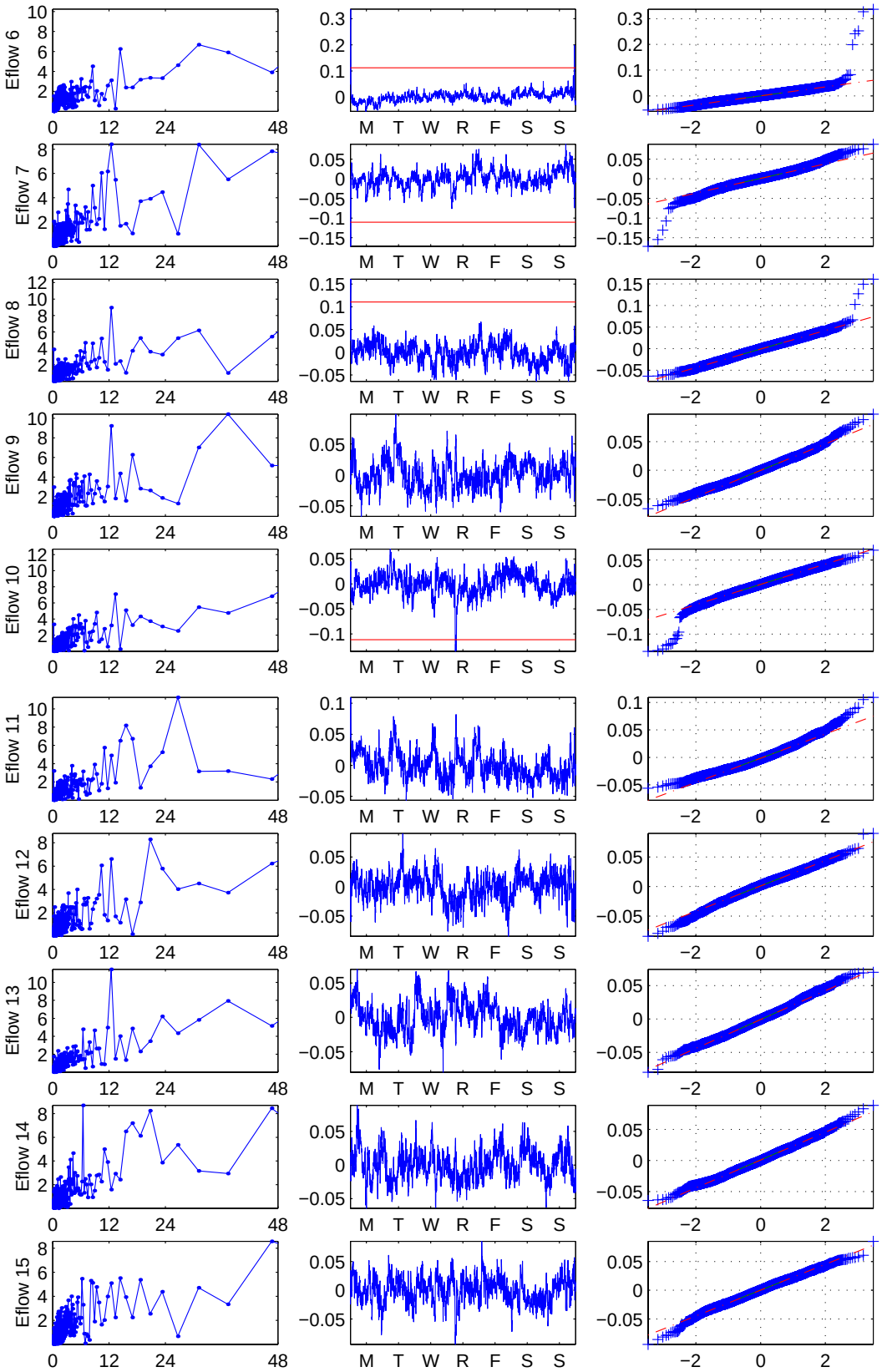
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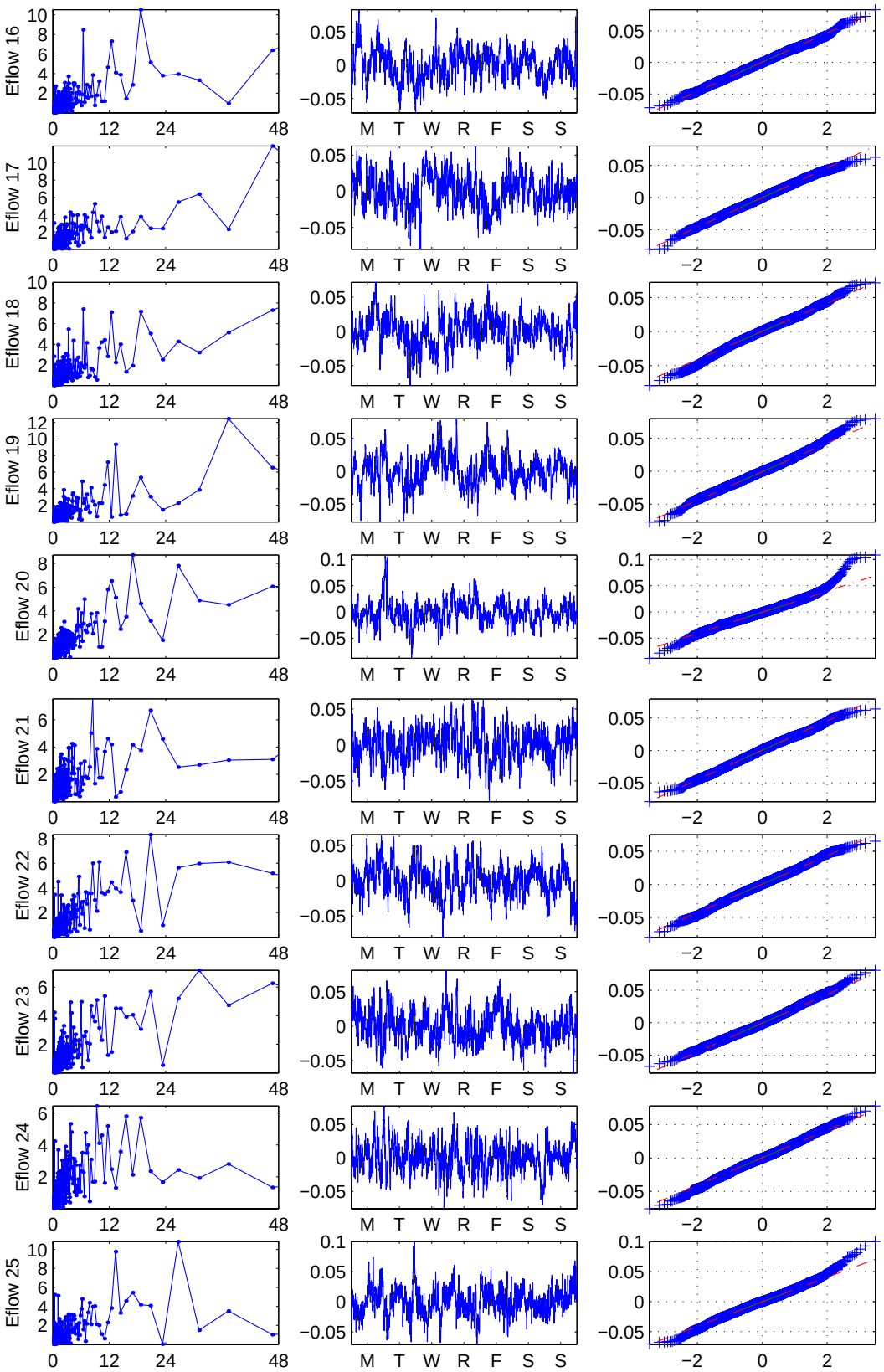
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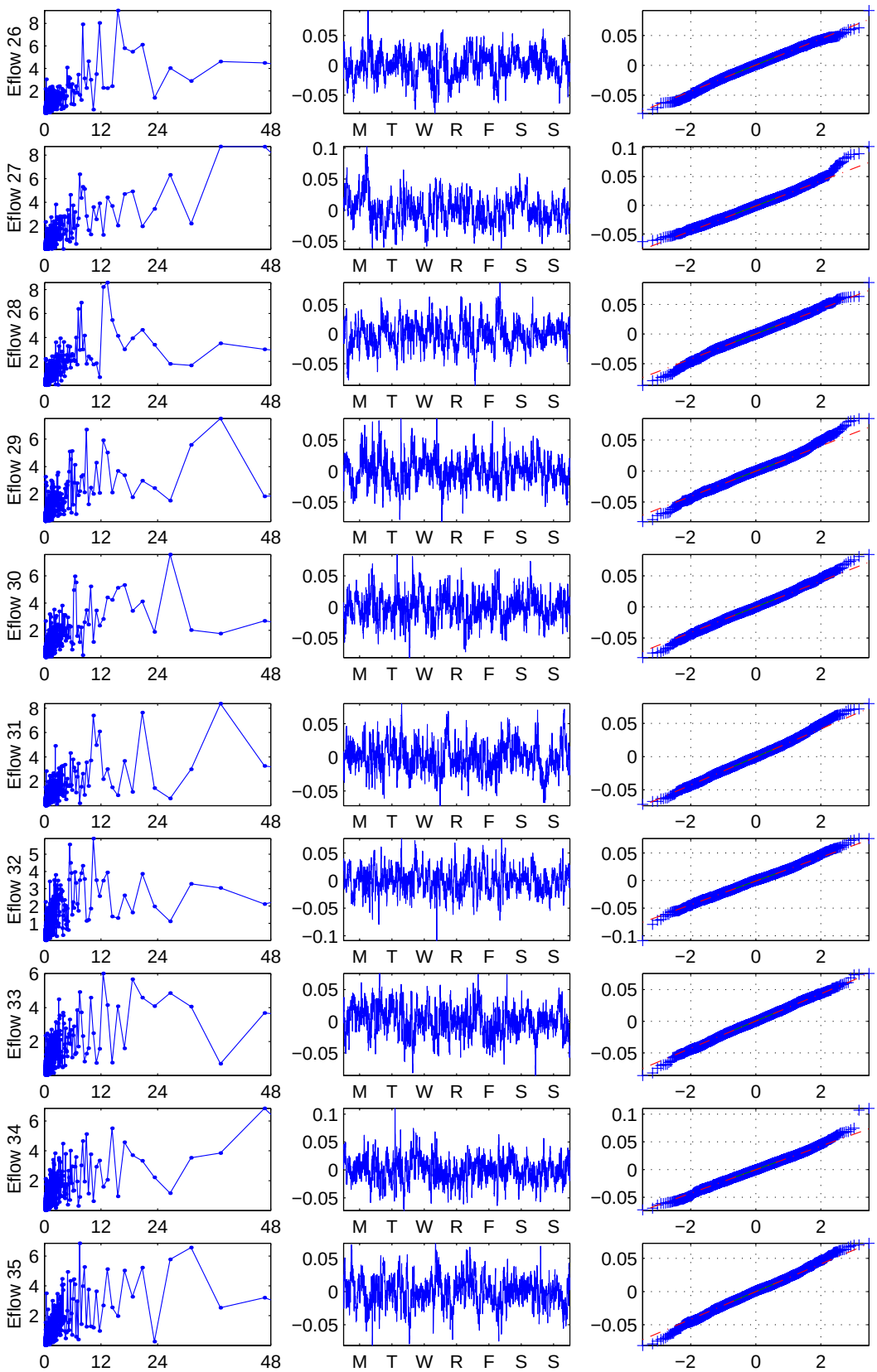
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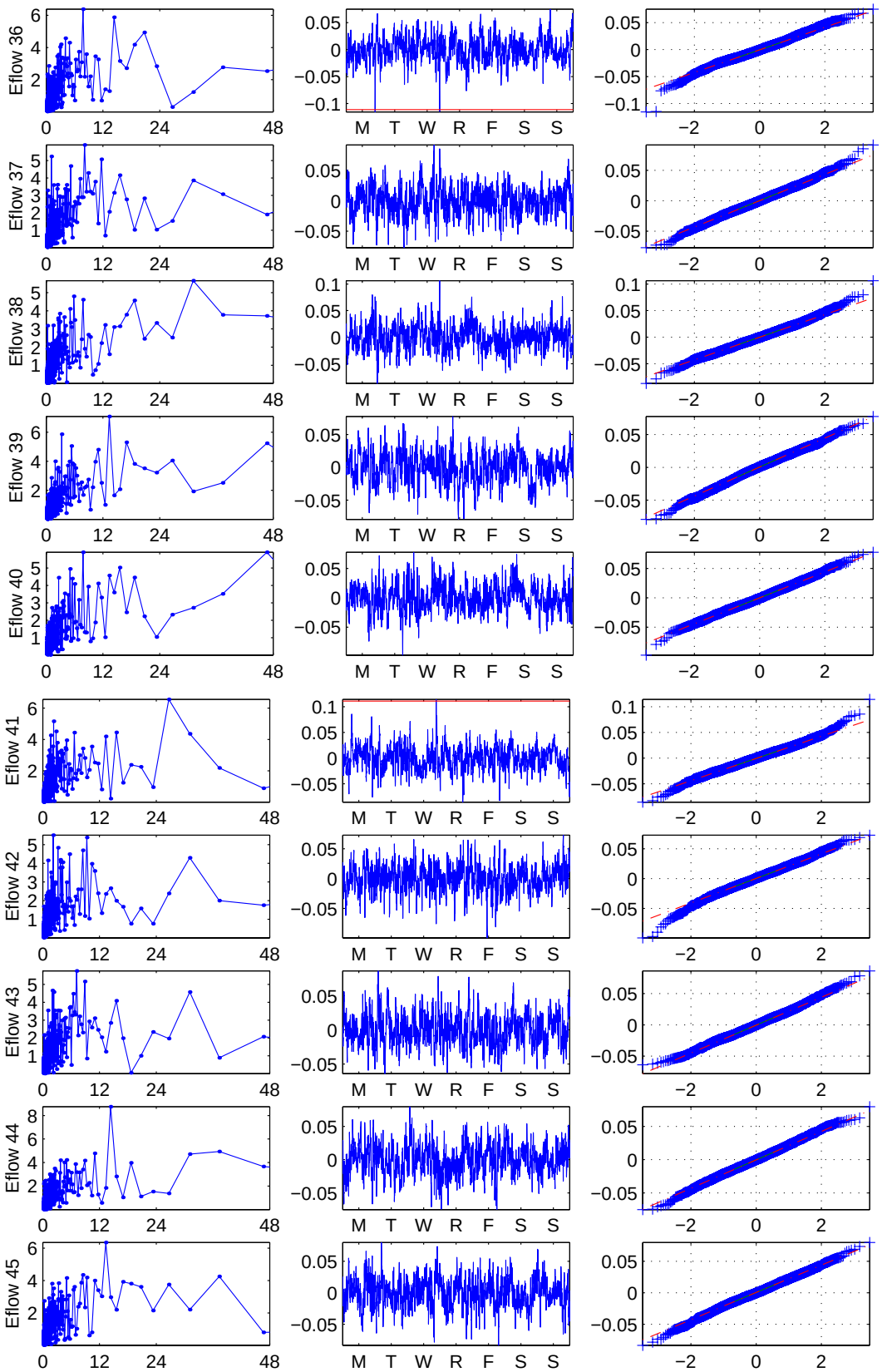
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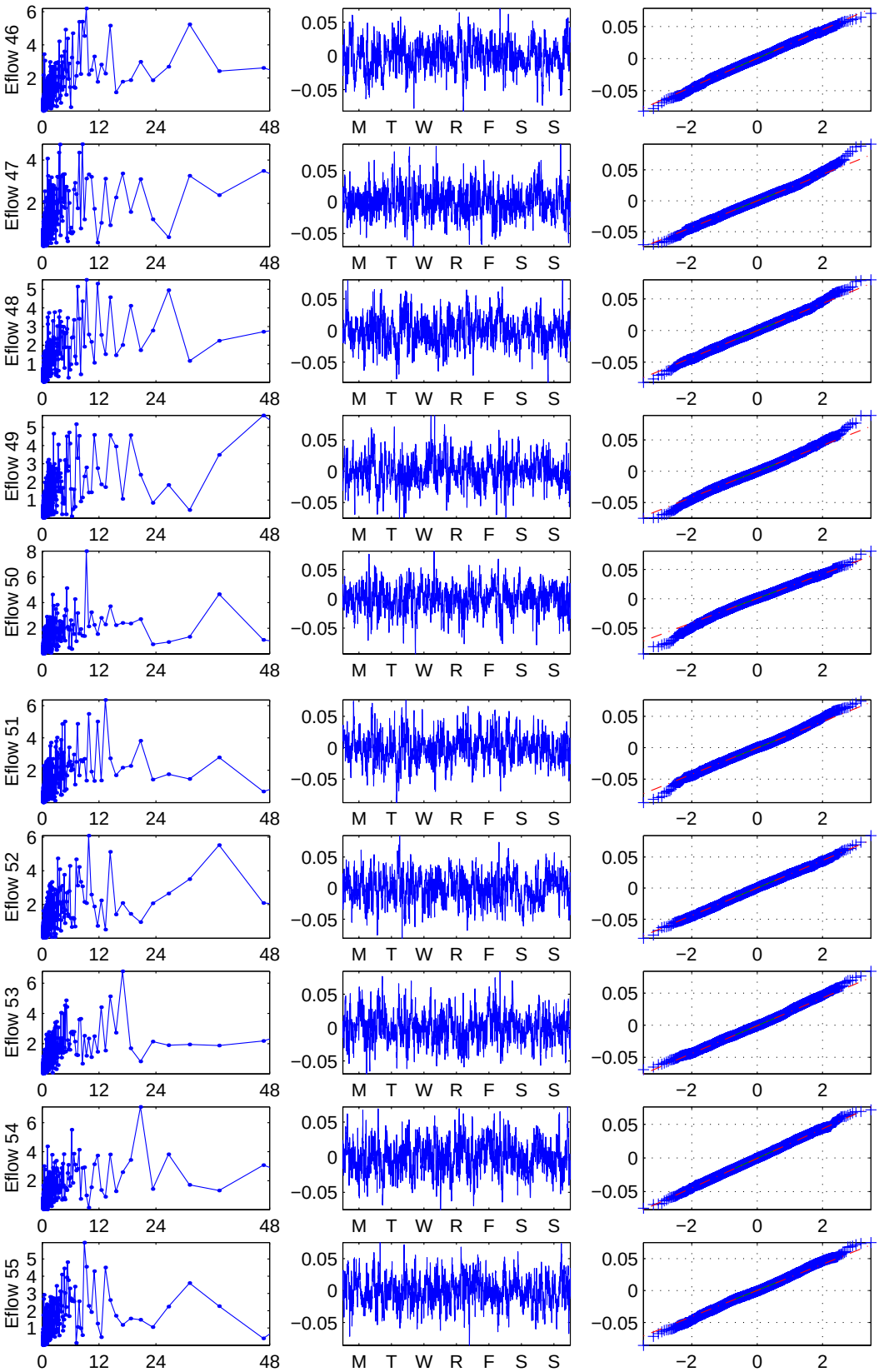
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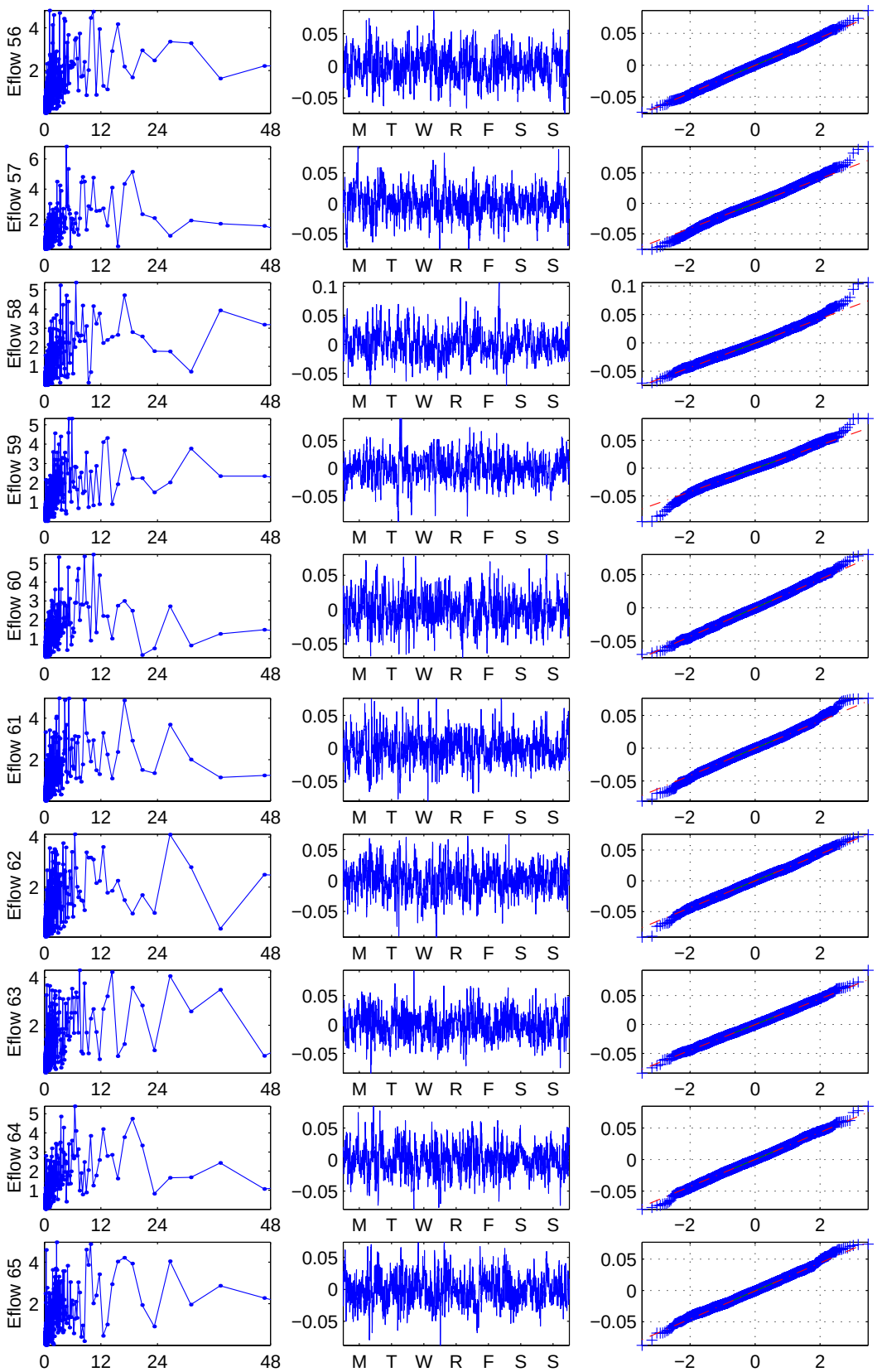
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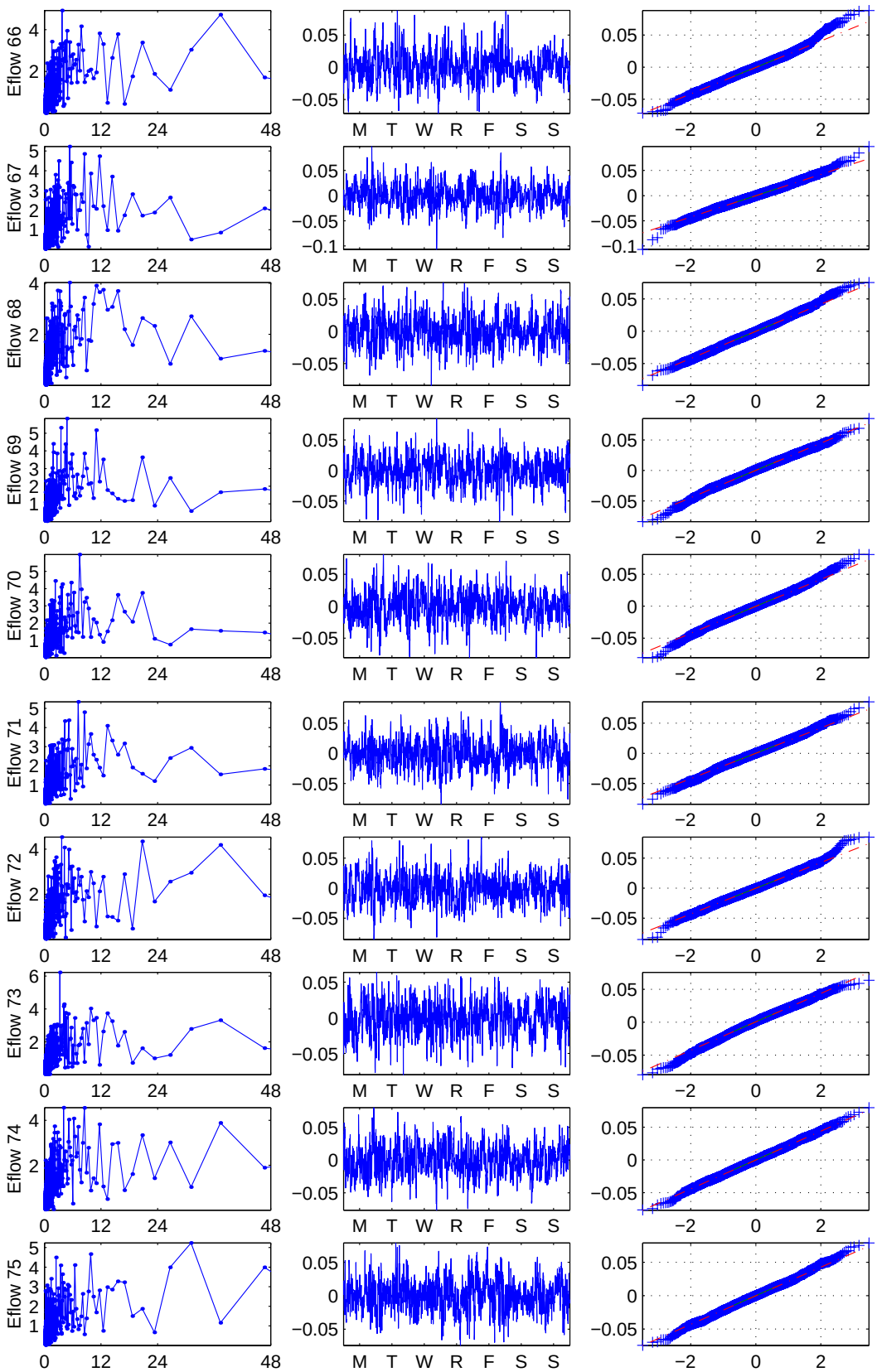
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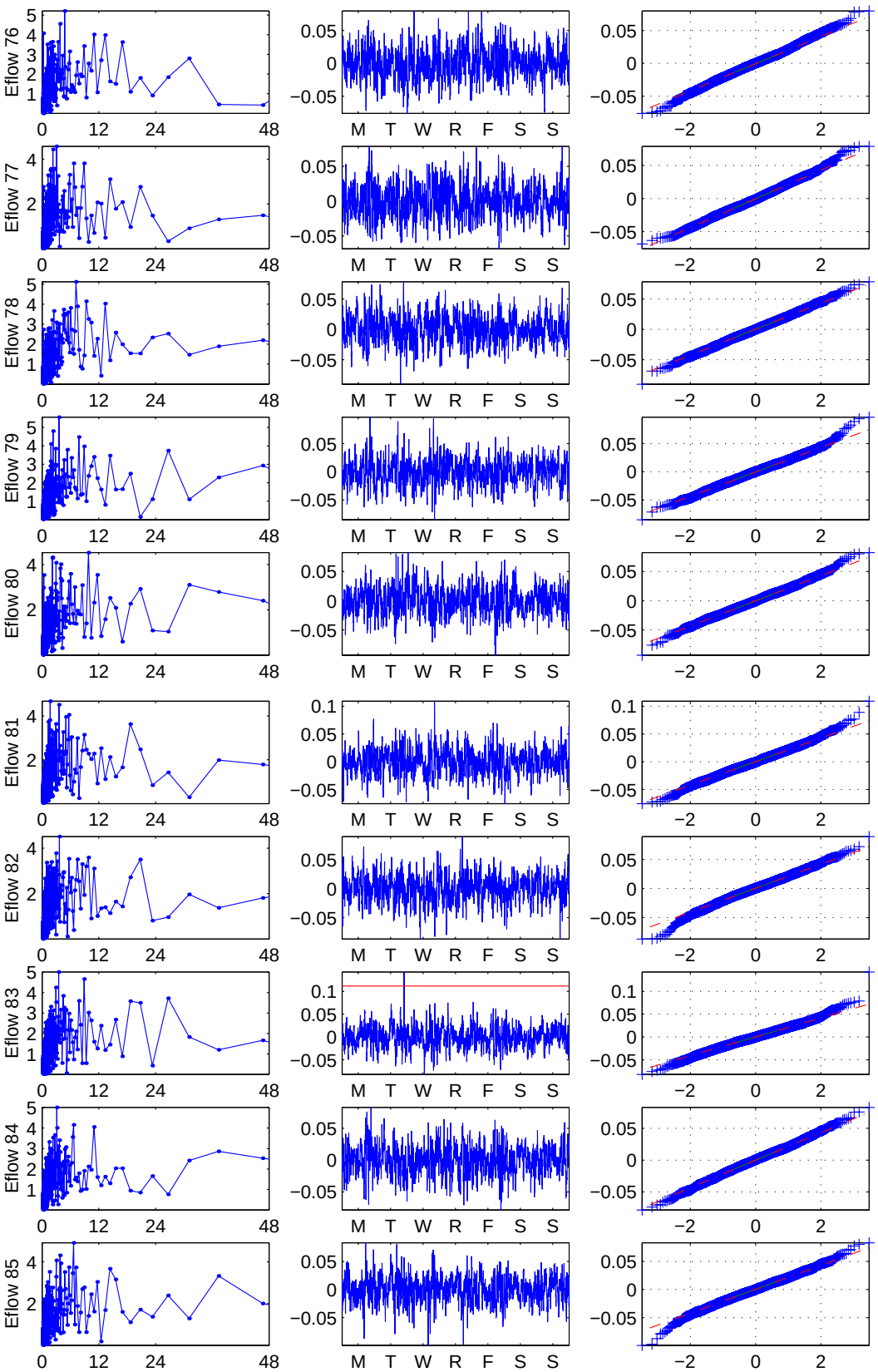
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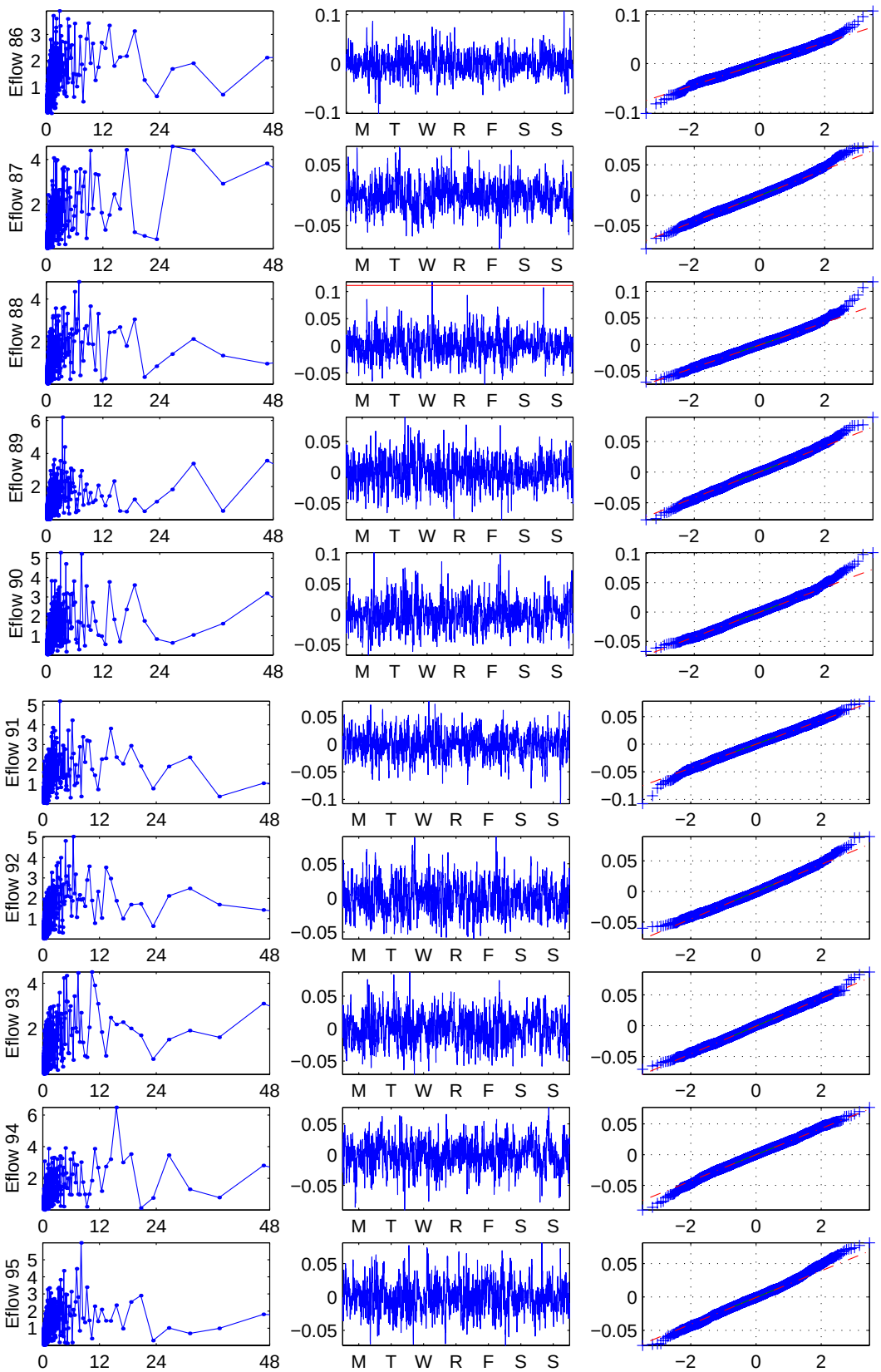
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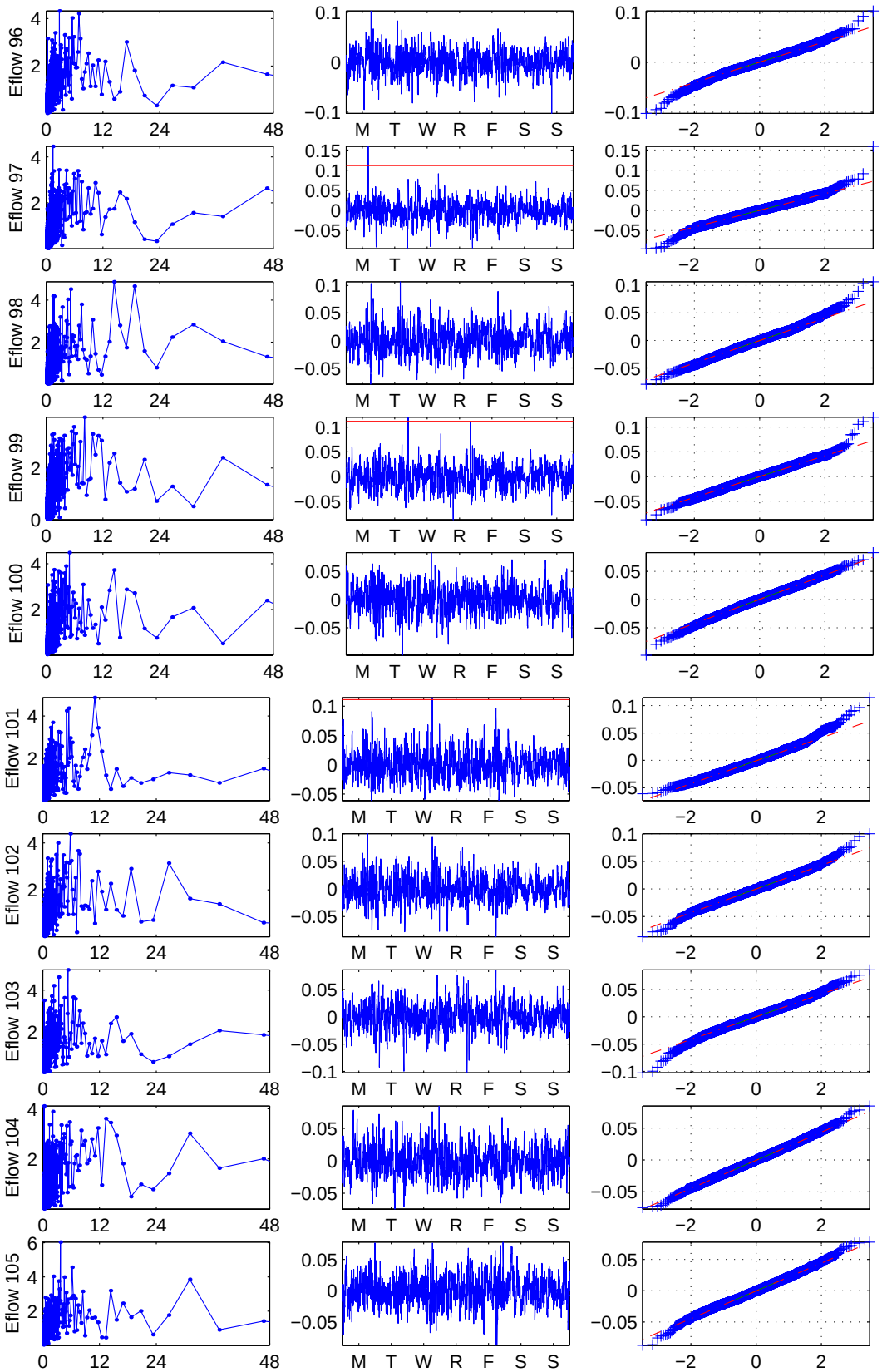
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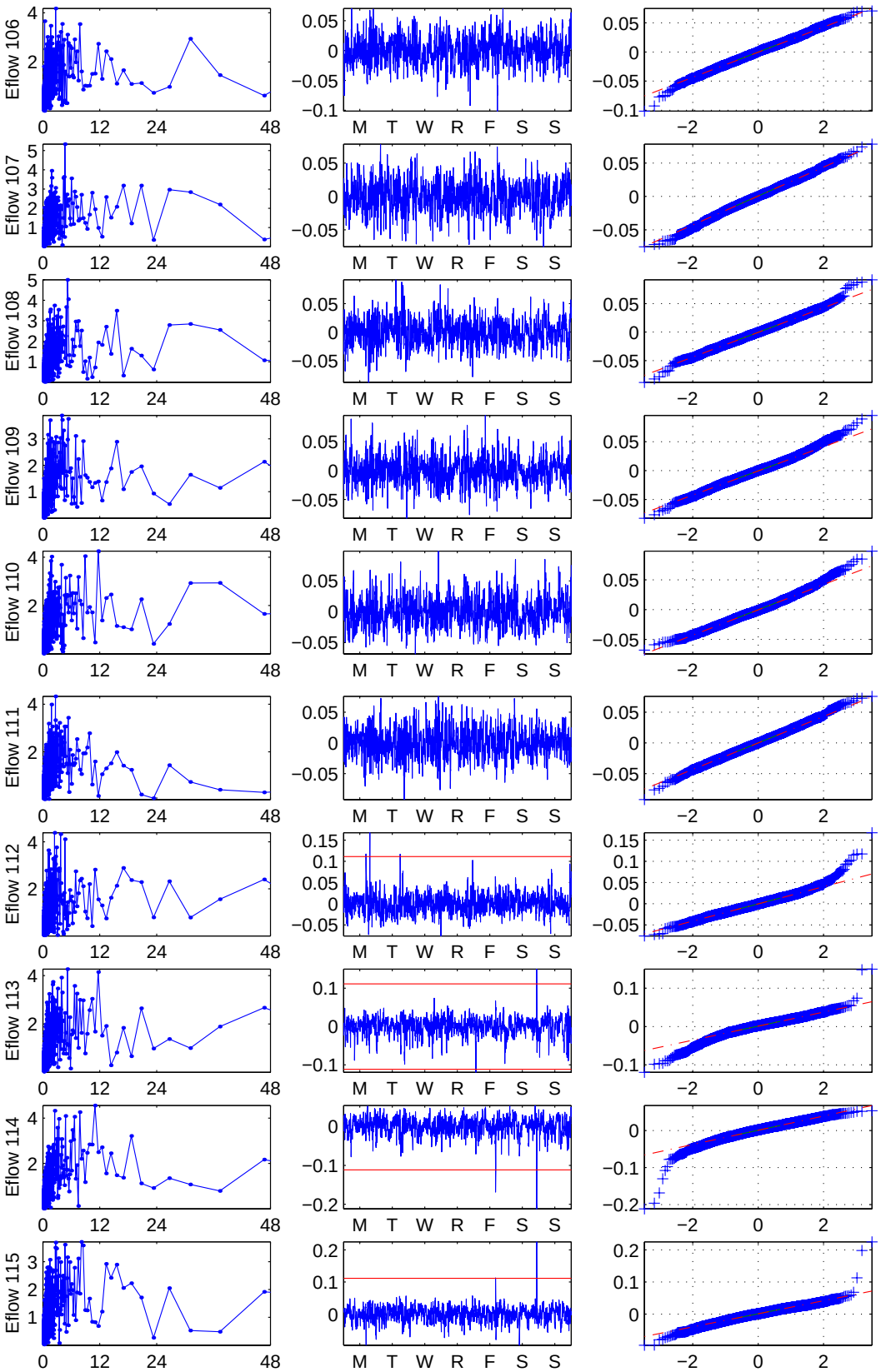
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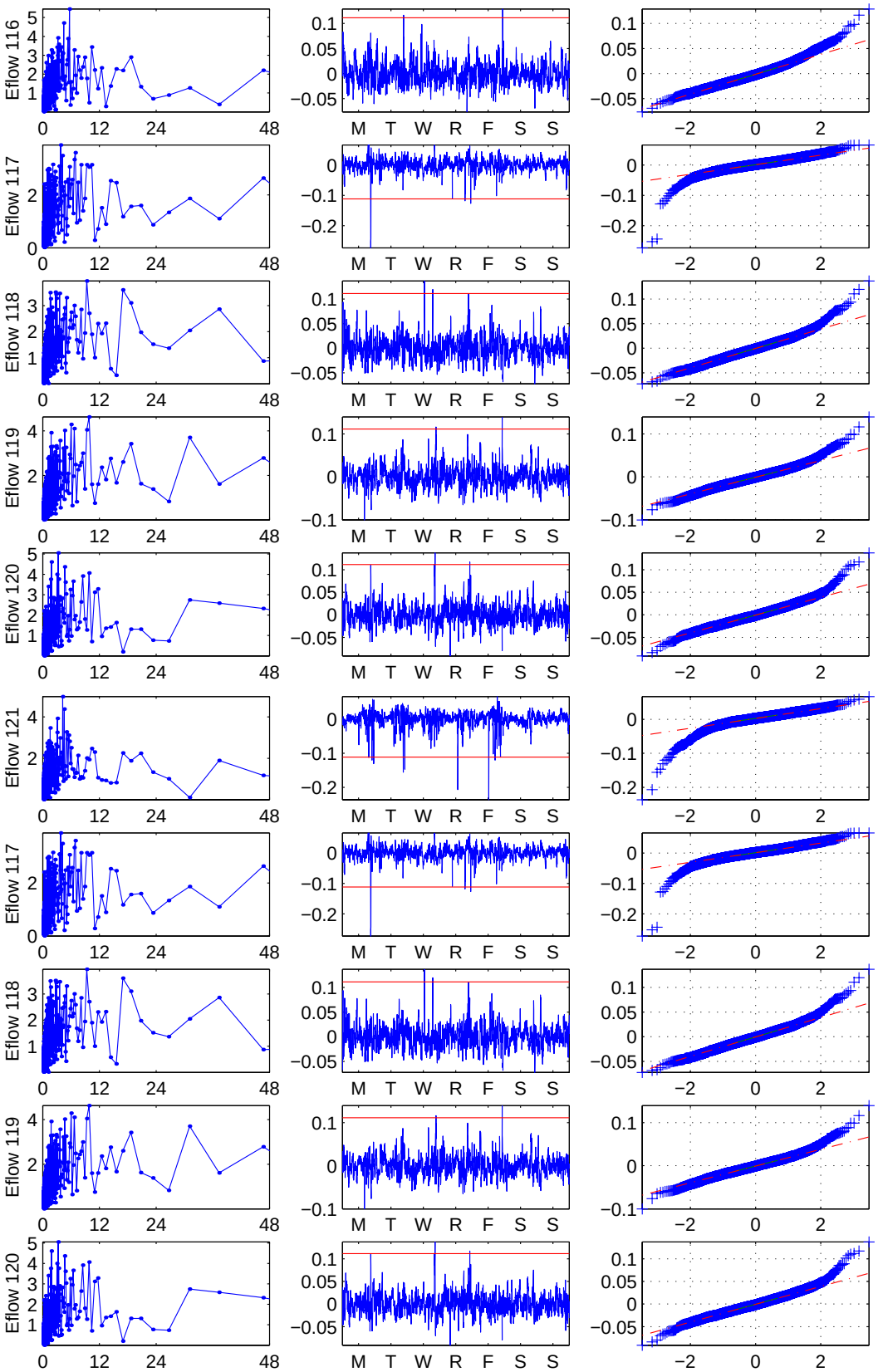
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