
ESTUDIO DE SINTONIZACIÓN DE ESTABILIZADORES DE SISTEMAS DE POTENCIA (PSS)

ANEXO A Informe Preliminar

GERENCIA DE OPERACIÓN

Febrero 2020



Estudio De Sintonización De Estabilizadores De Sistemas De Potencia (PSS)
Informe preparado por el Departamento de Estudios de Sistemas Eléctricos

Rev.	Fecha	Comentario	Realizó	Revisó / Aprobó
1	12-02-2020	Anexos A Informe Preliminar	Carlos Prieto C Flavio Serey	Víctor Velar

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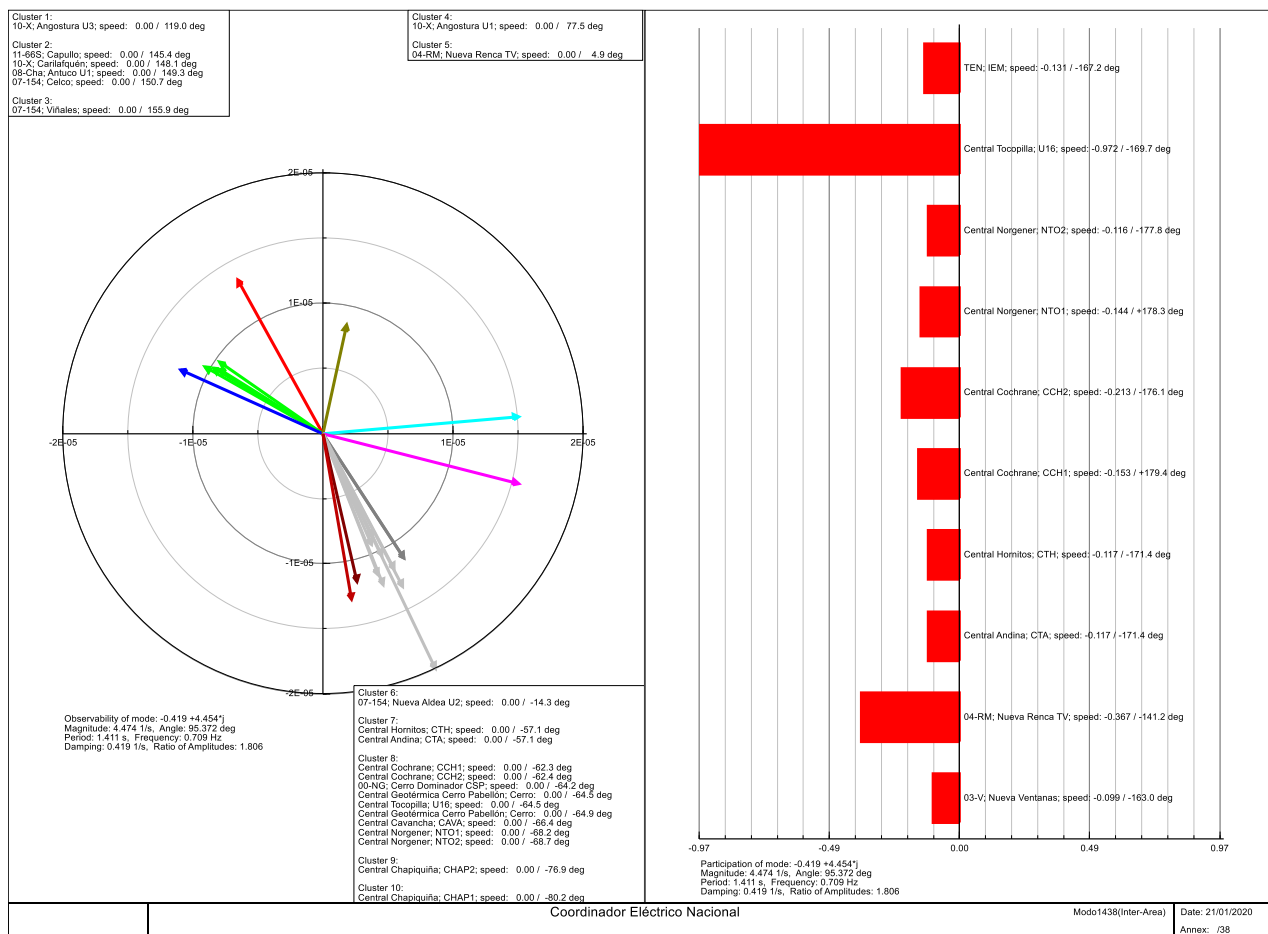
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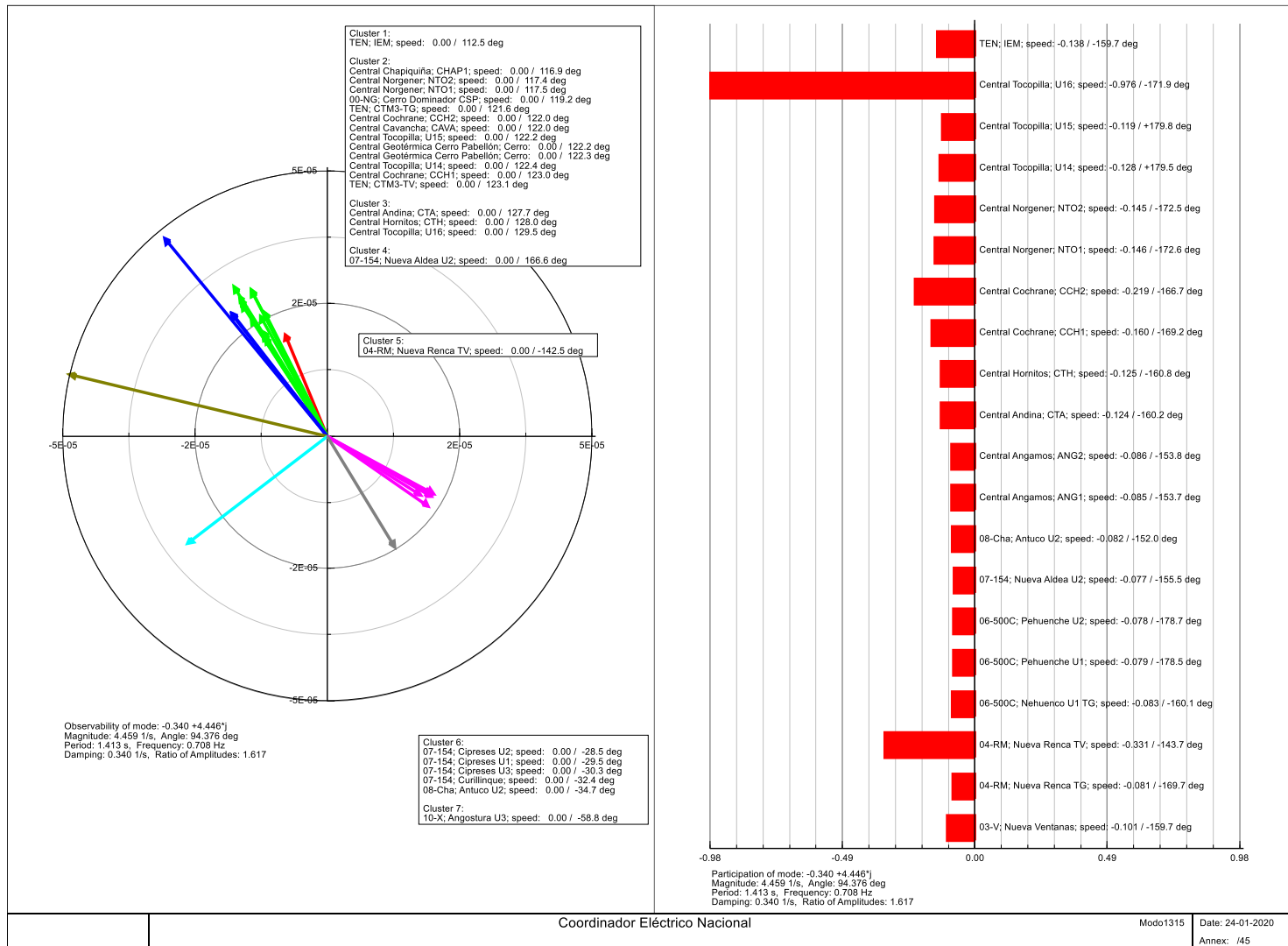
15 ANEXO 1: DETALLE MODOS CRÍTICOS ÍTER-ÁREA Y LOCALES RELEVANTES

15.1 Modo NG 0,69-0,71 [Hz]

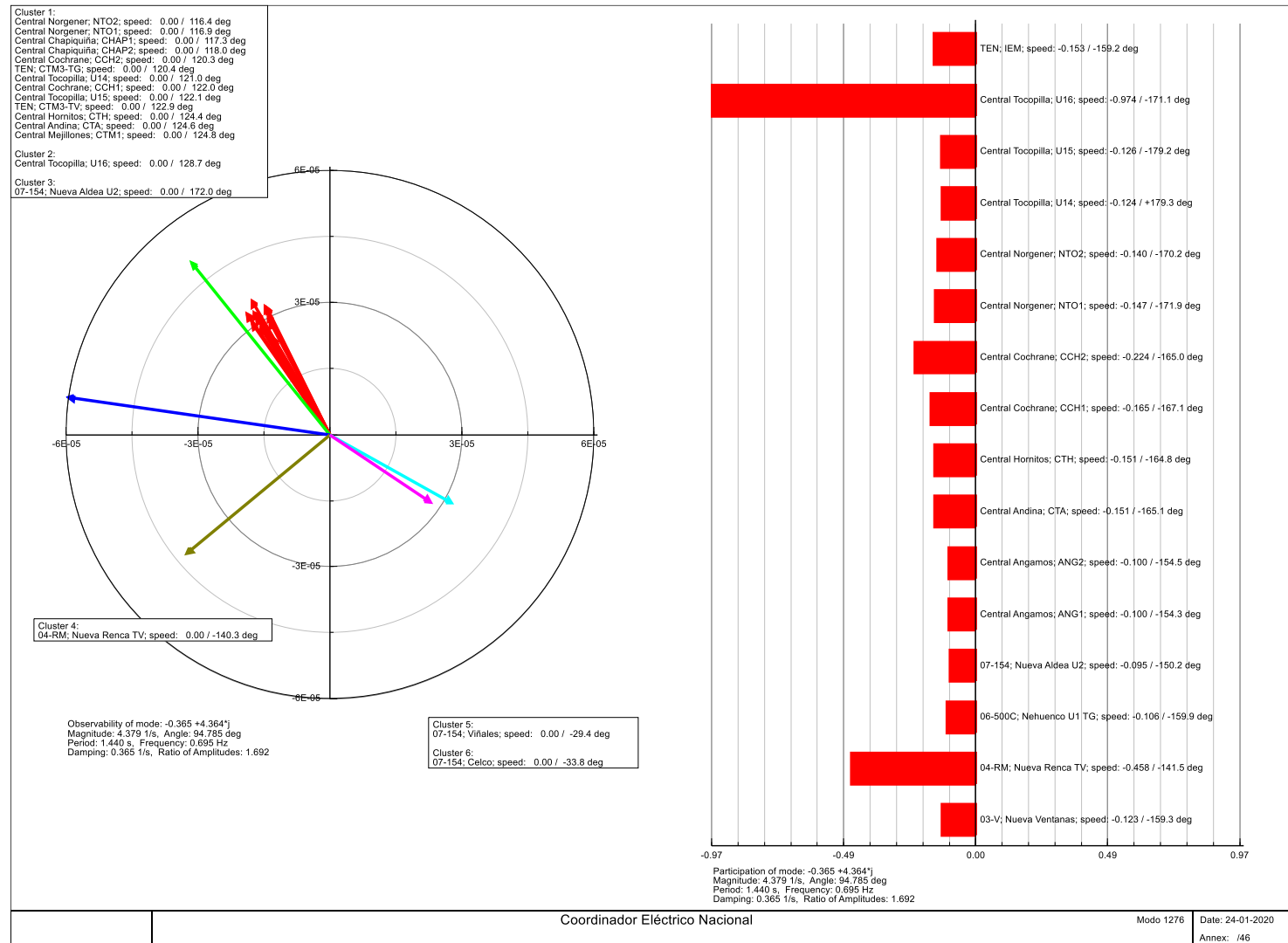
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15.1.2 Modo 1315 E3 DA noche Mar20

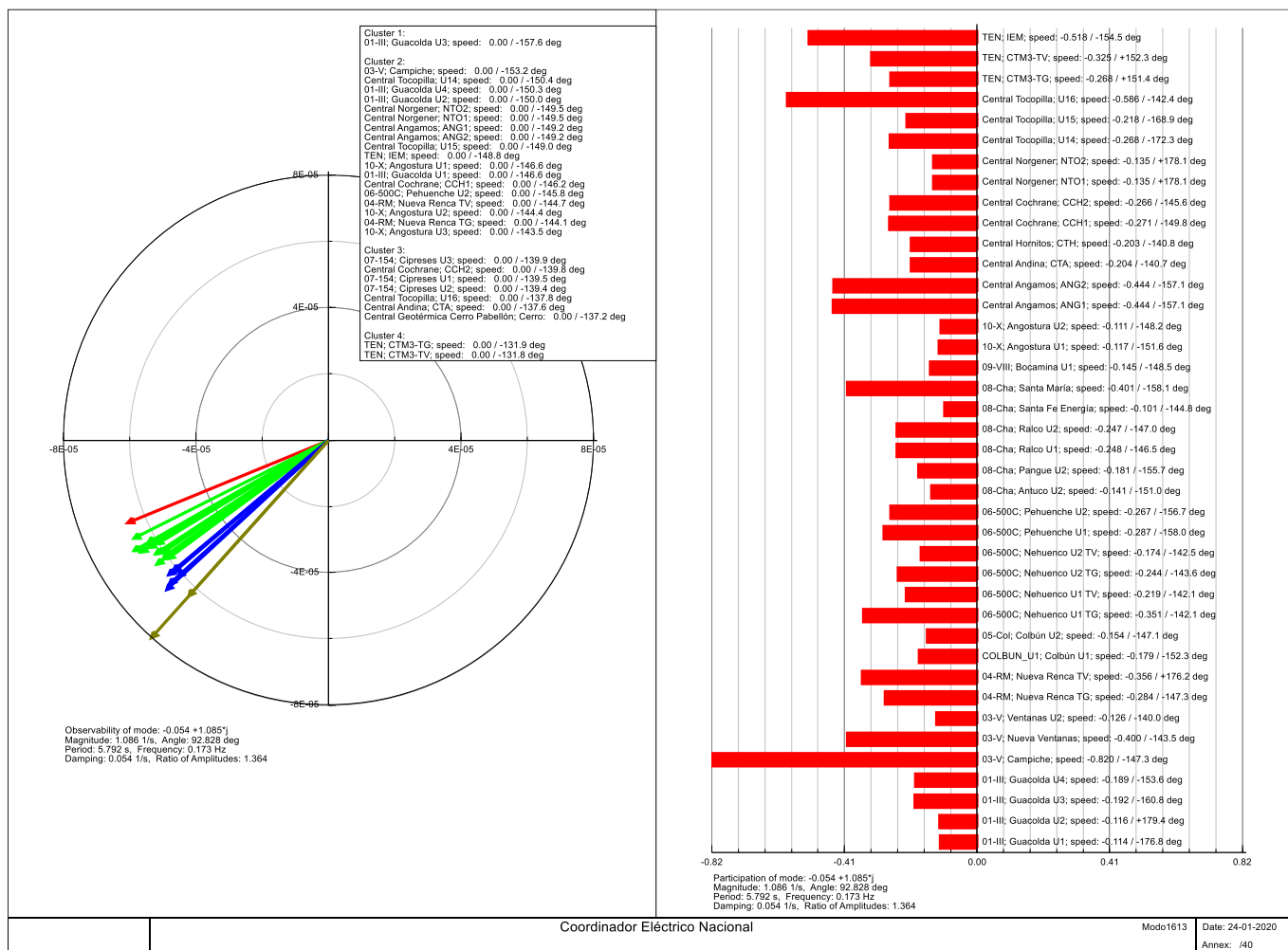


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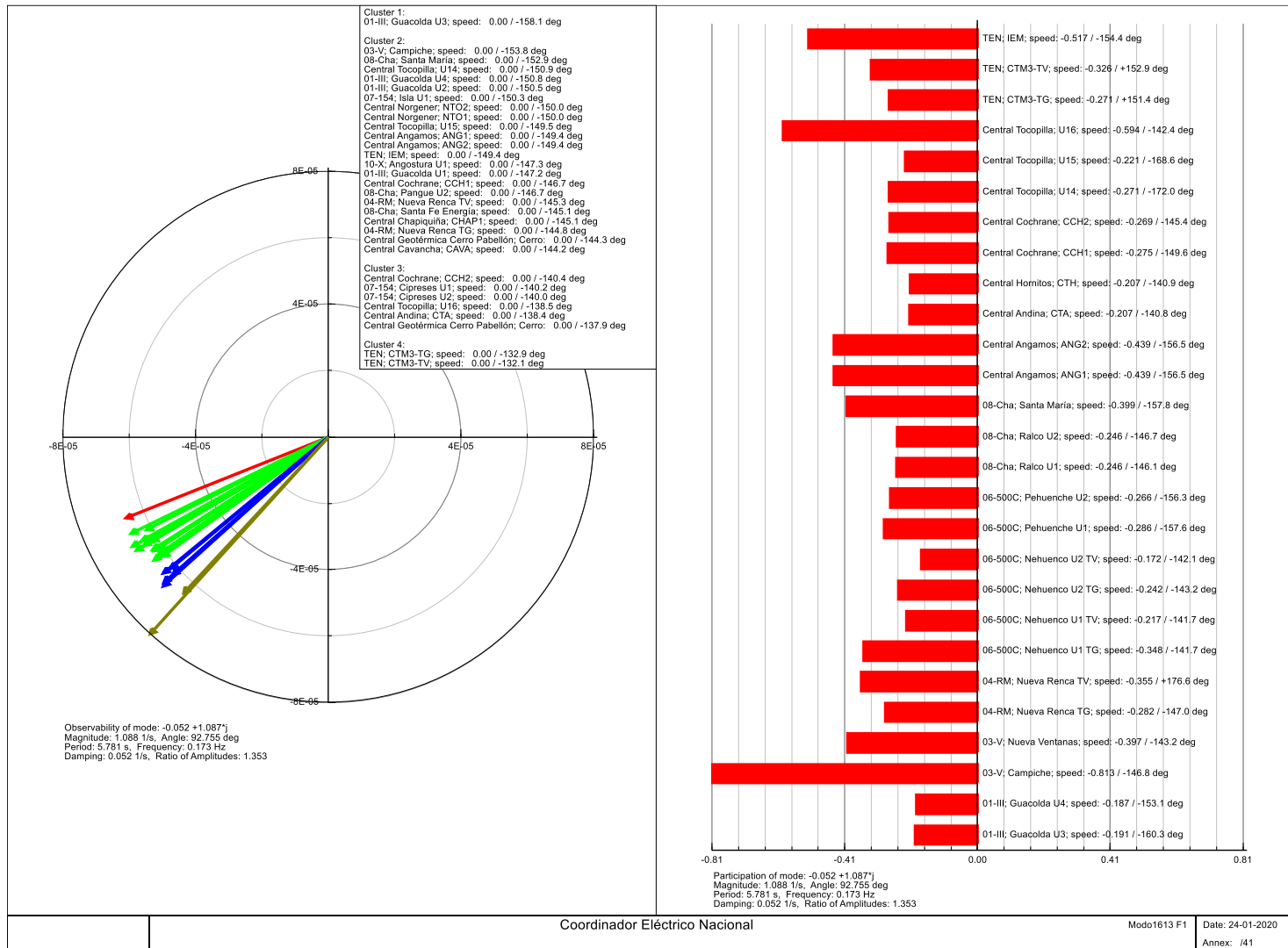


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15.2.1 Modo 1643 E3 DA noche Mar2020



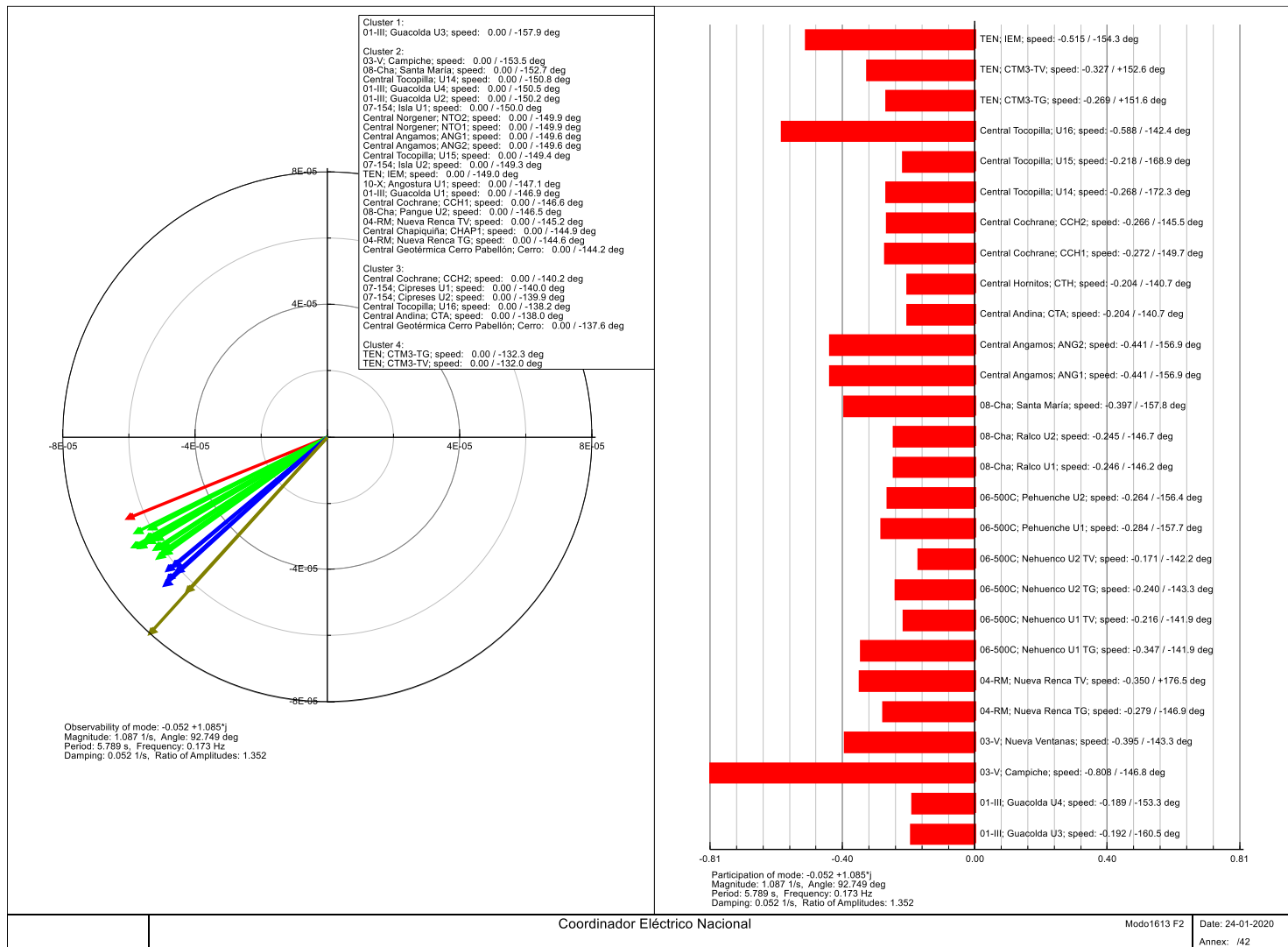
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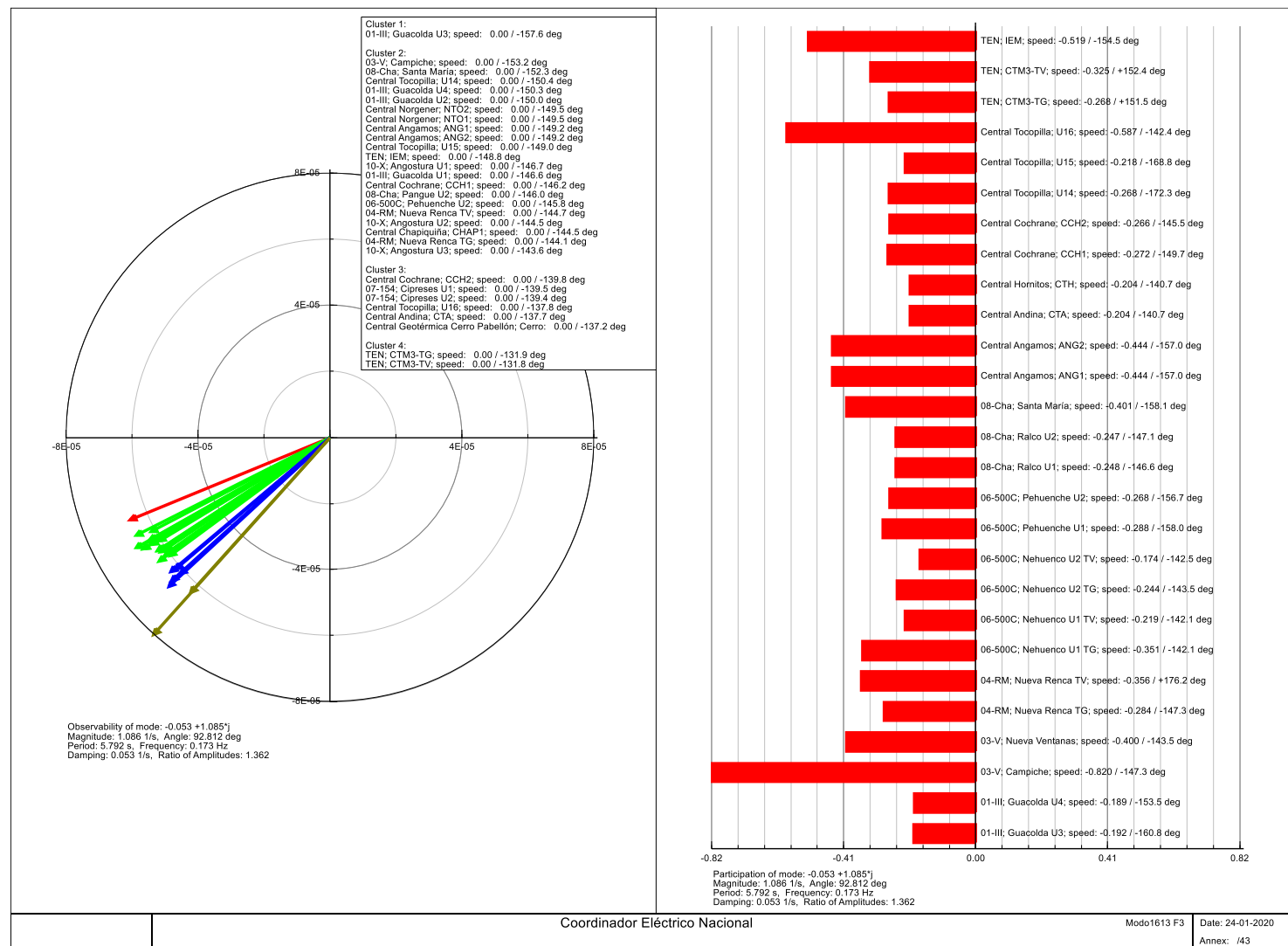
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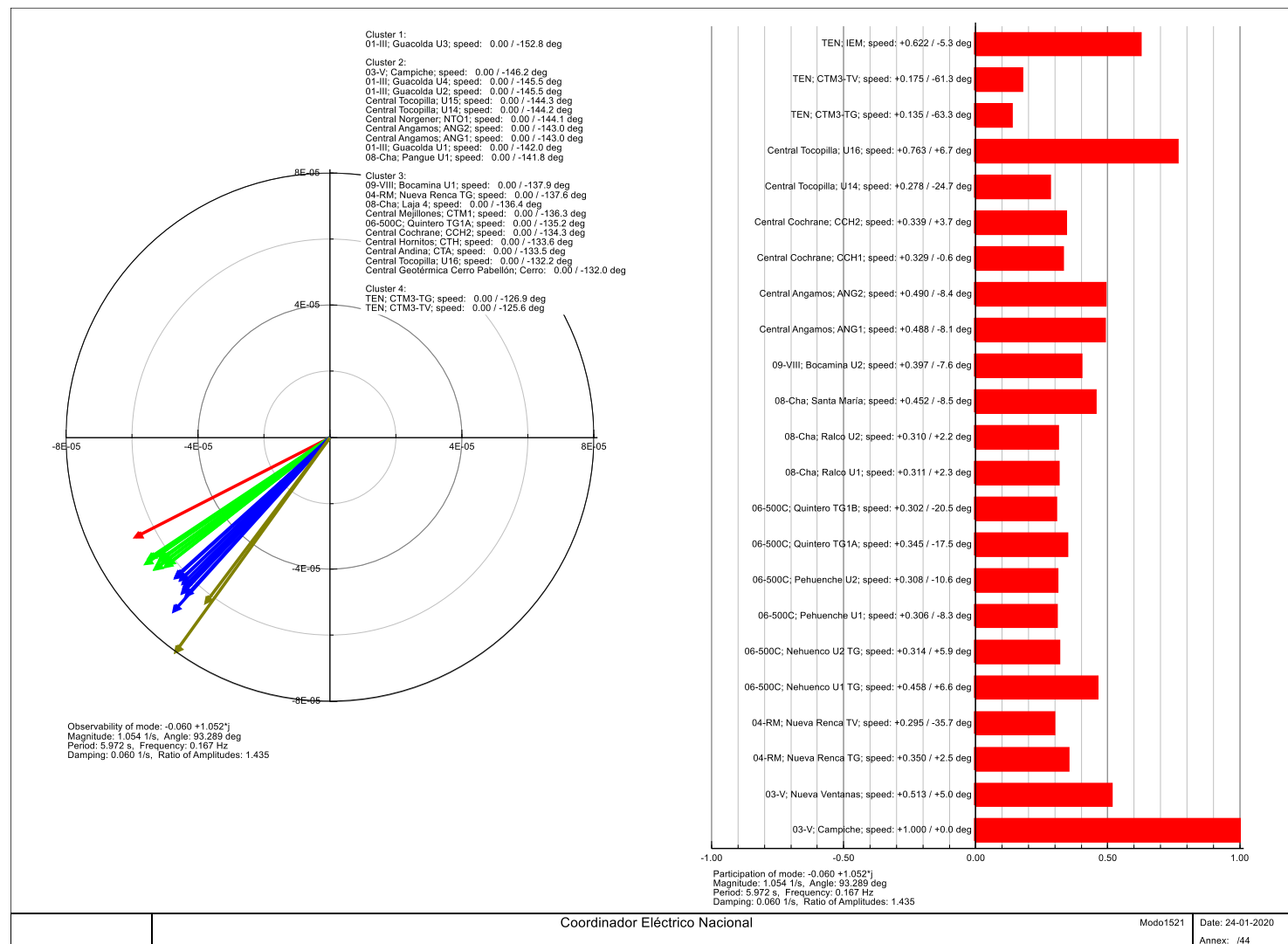
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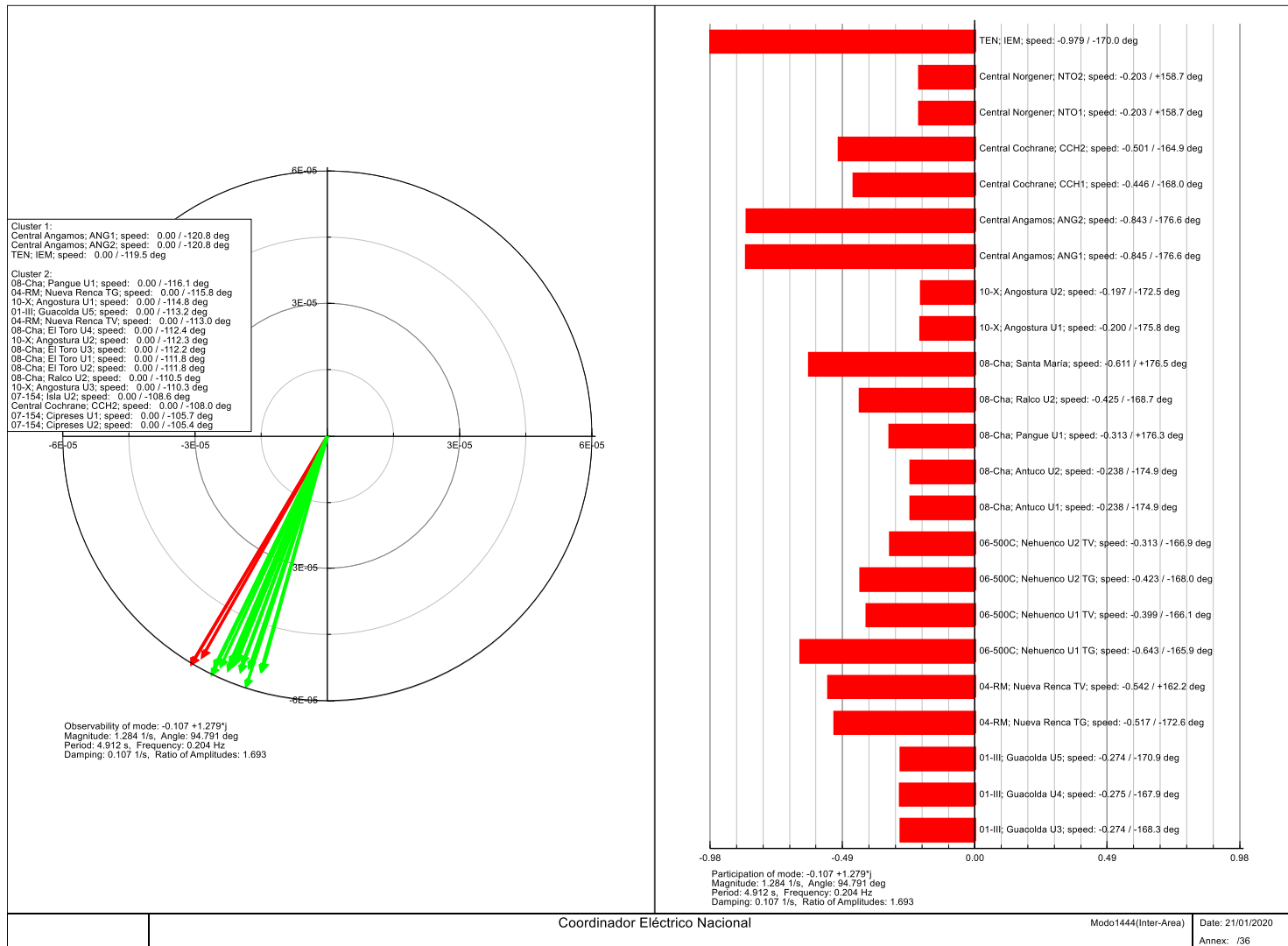
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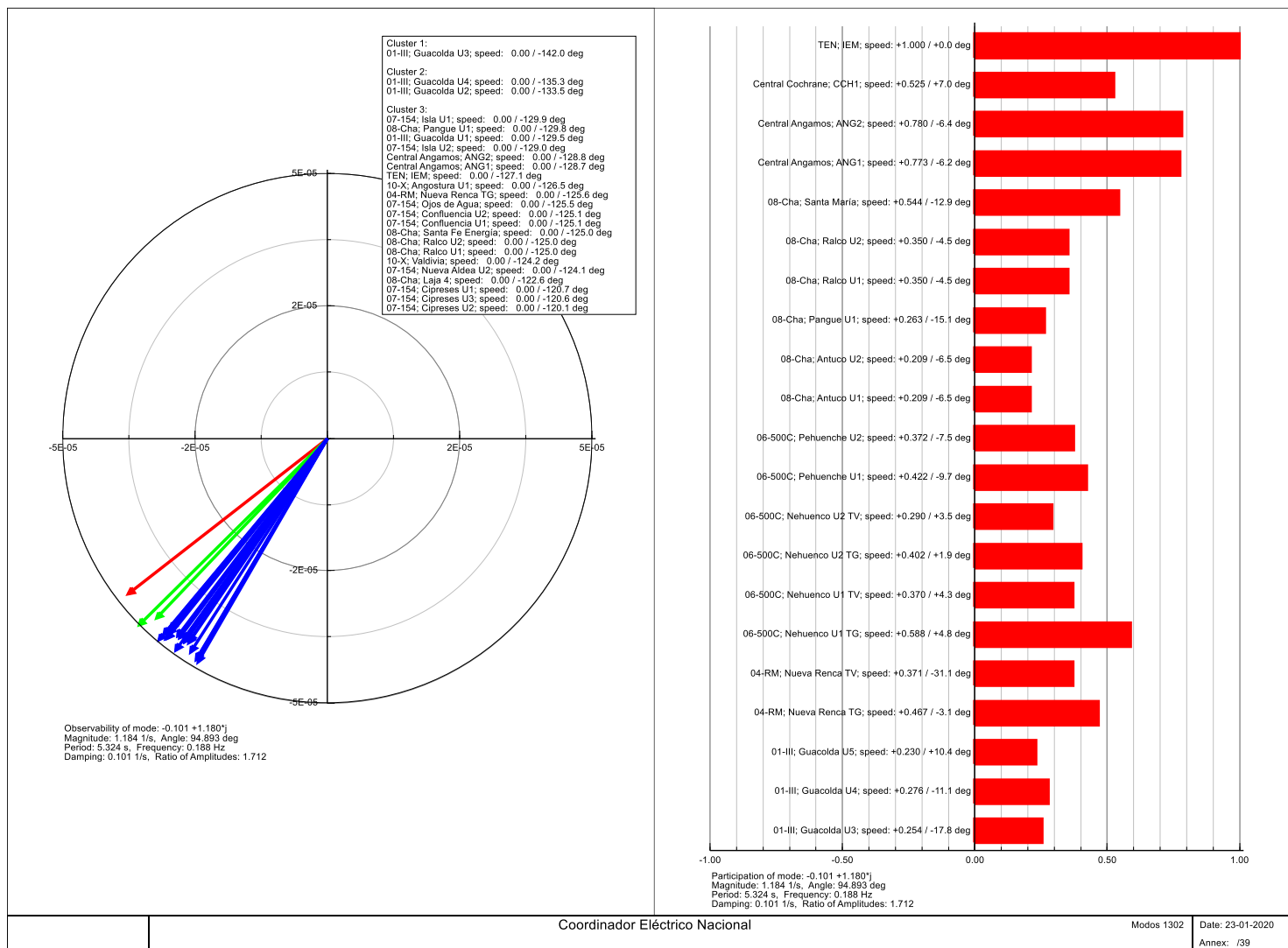
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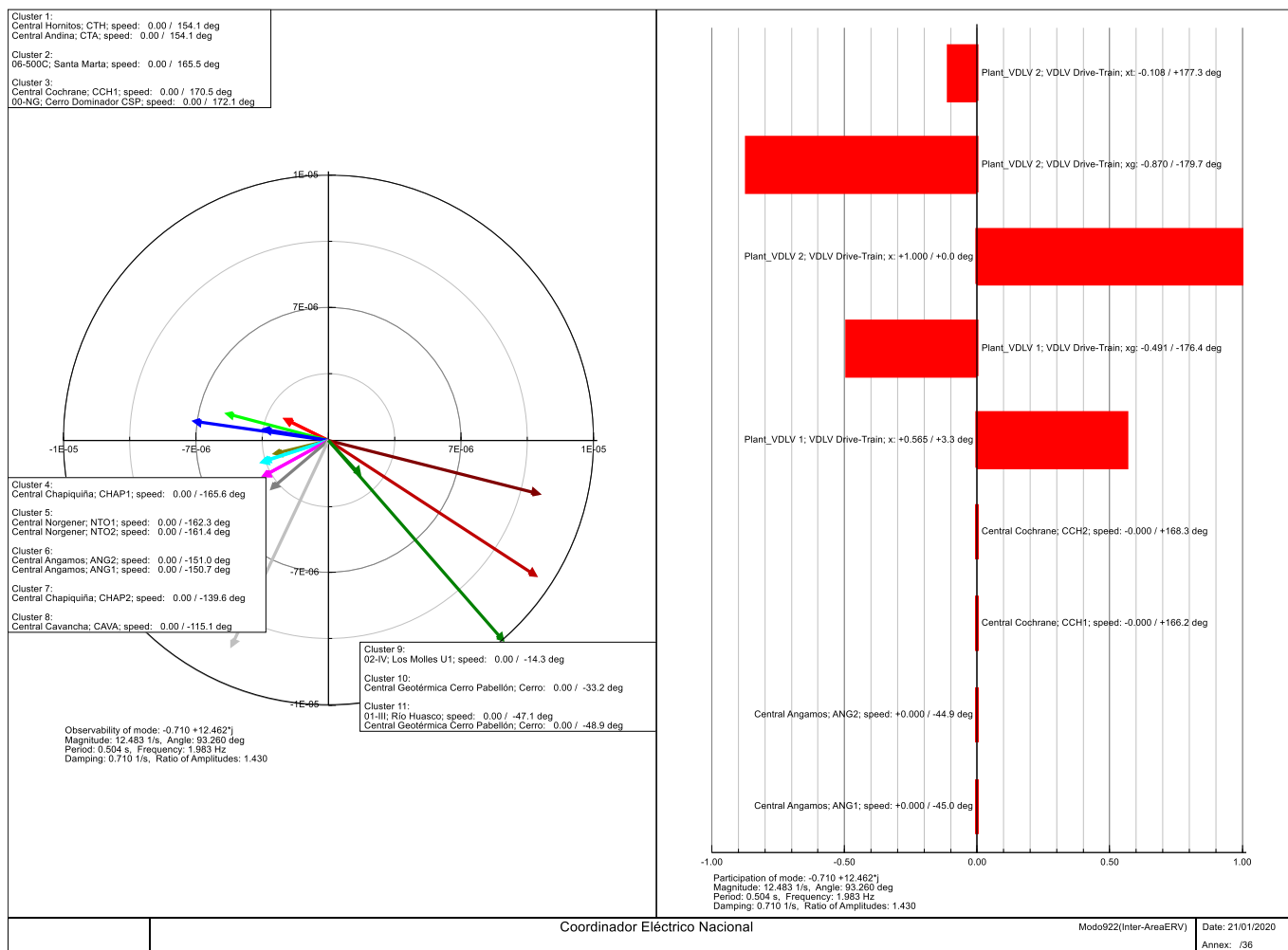


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15.3 Modo Valle de los Vientos

15.3.1 Modo 922 E2 DA día Abr2020



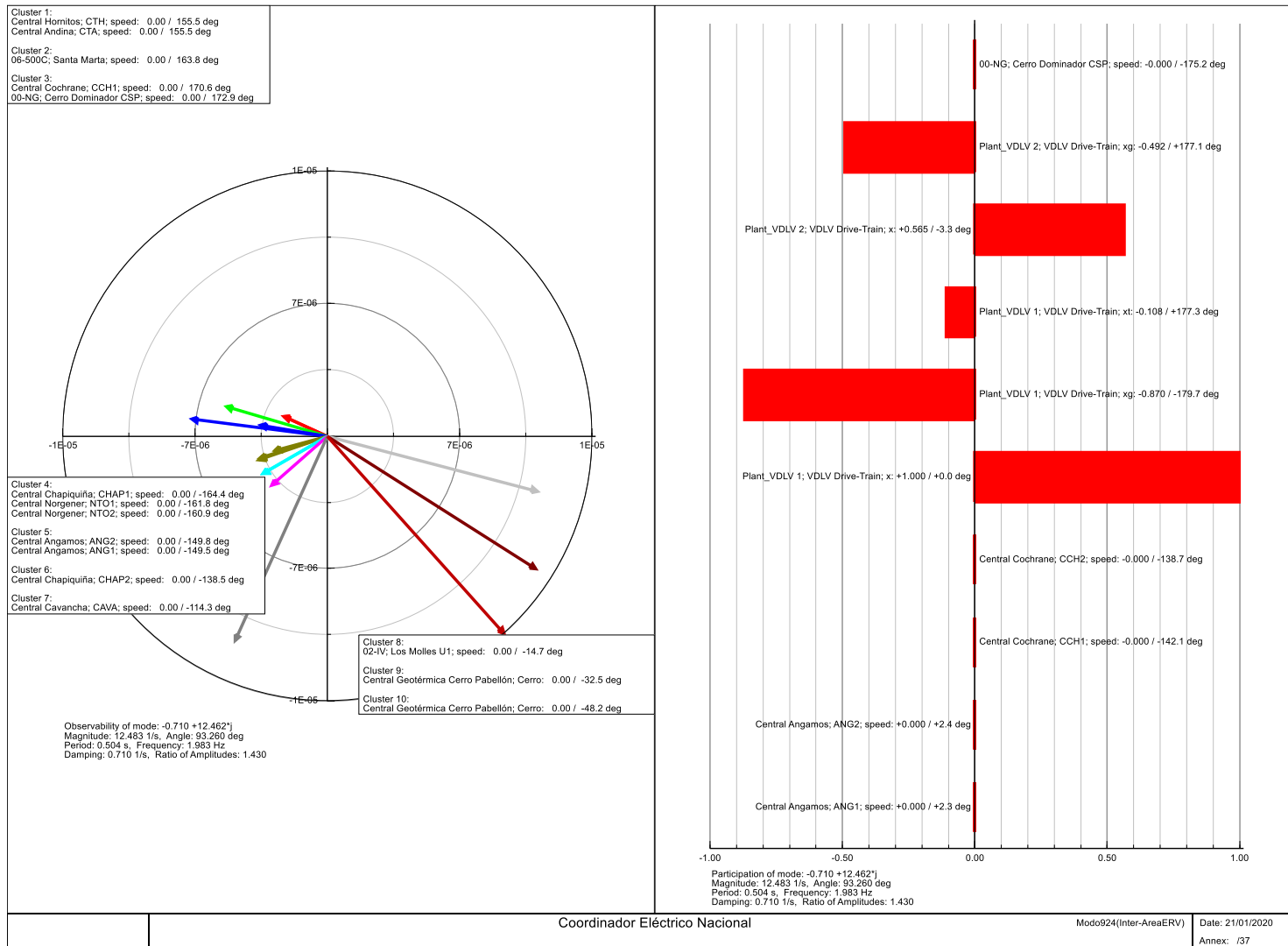
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Date: 21/01/2020

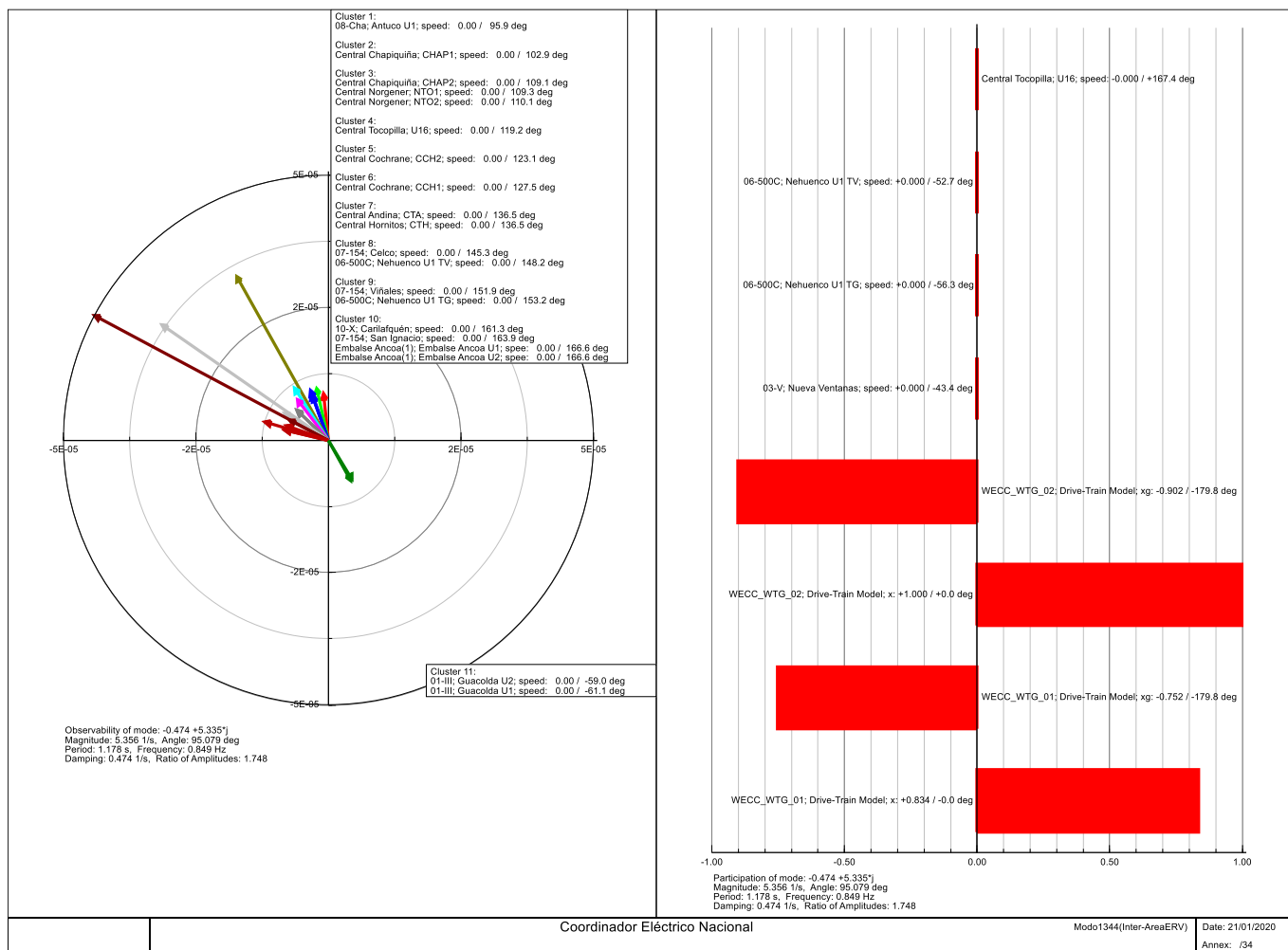
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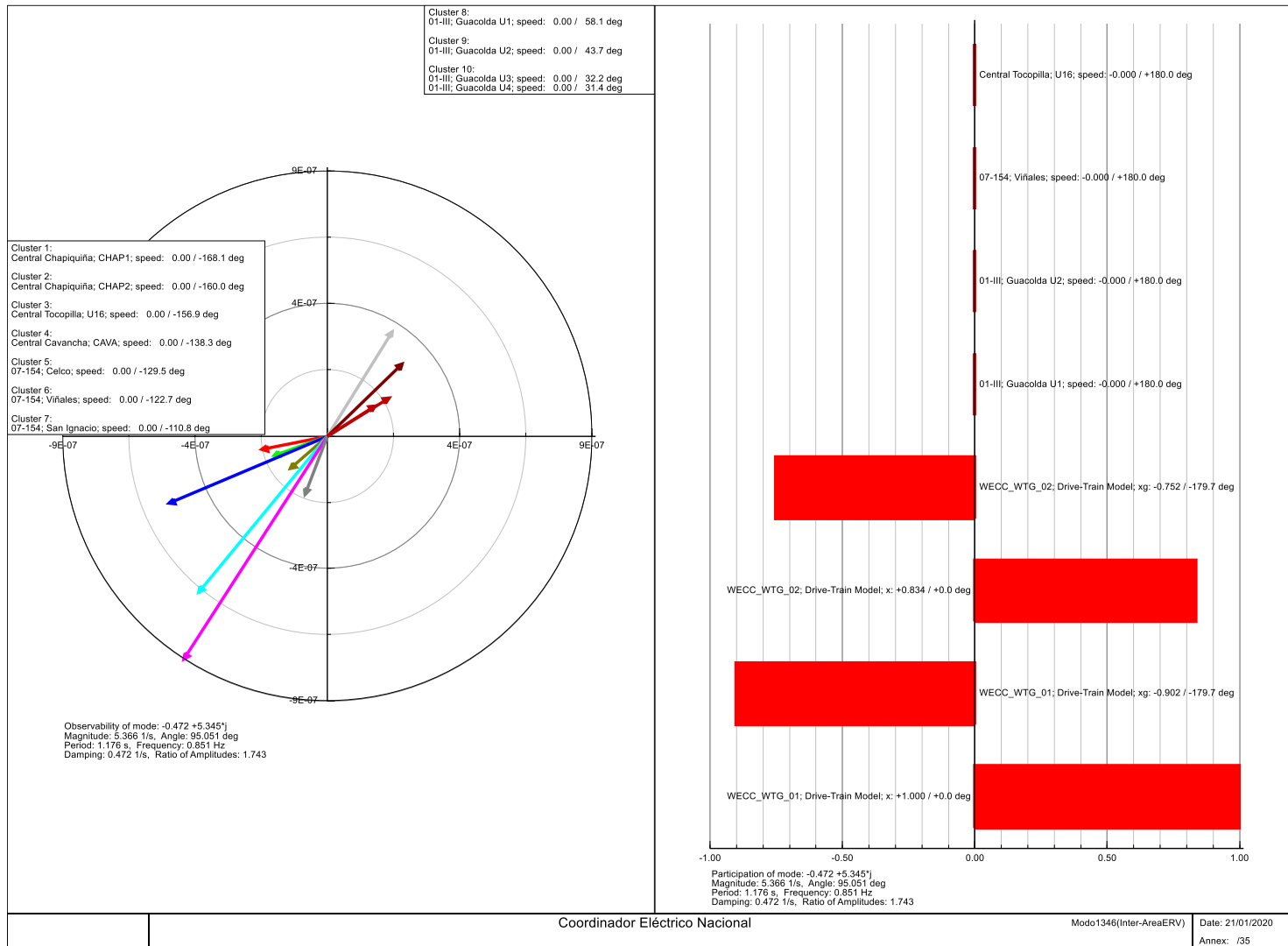


15.4 Modo Cabo Leones

15.4.1 Modo 1344 E2 DA día Abr2020



15.4.2 Modo 1346 E2 DA día Abr2020



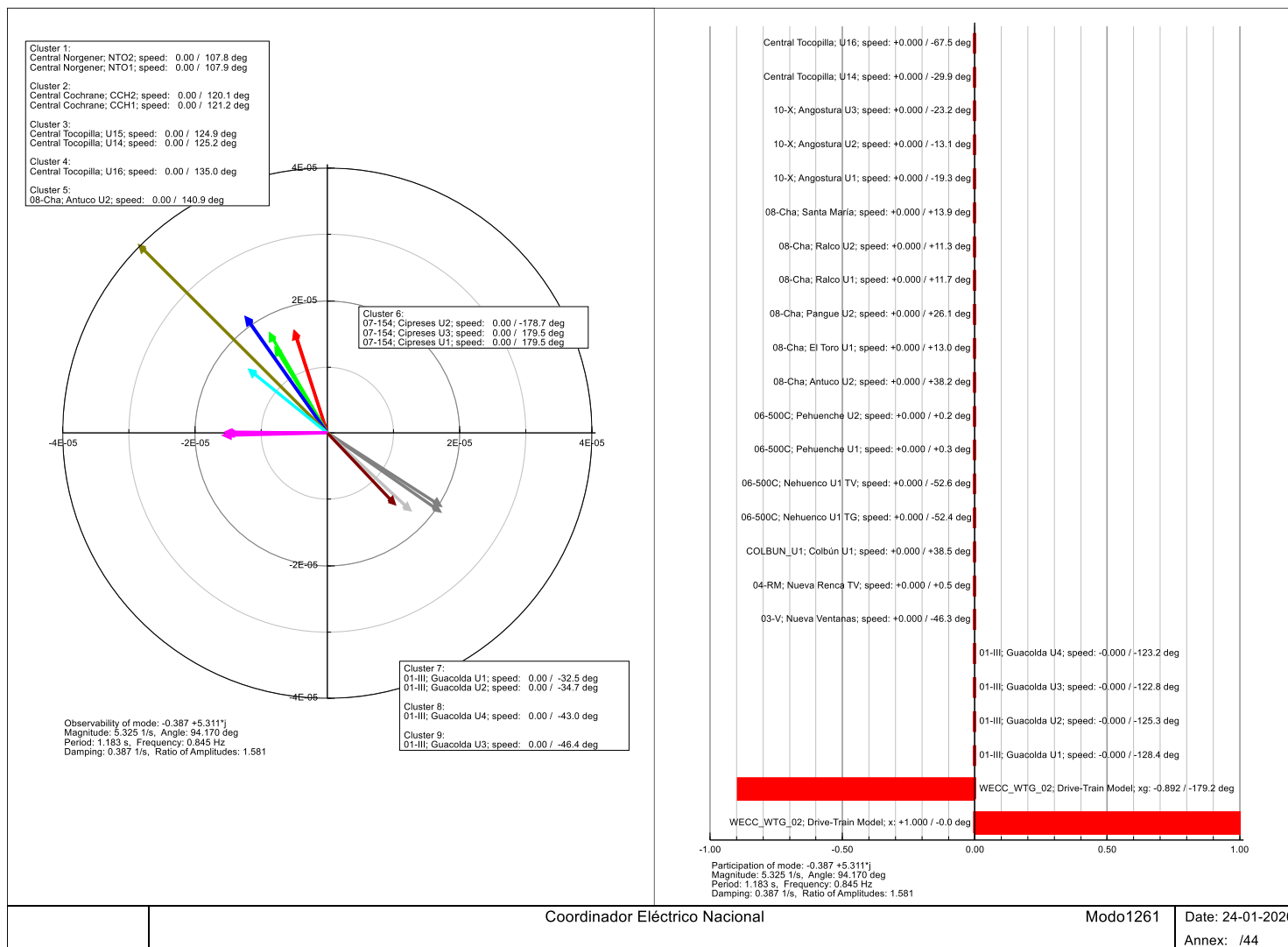
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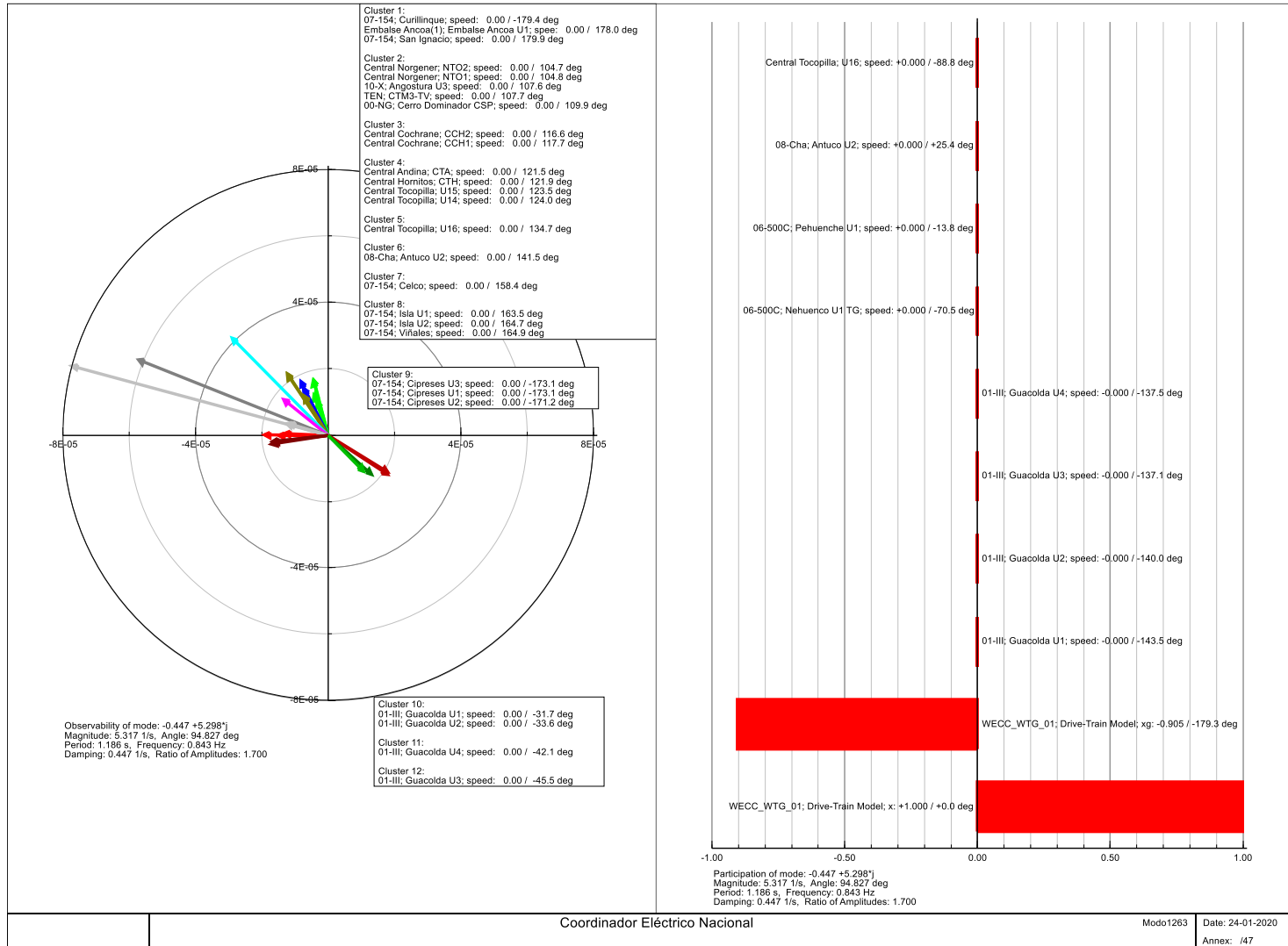
Date: 21/01/2020

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15.4.3 Modo 1261 E3 DA noche Mar2020



15.4.4 Modo 1263 E3 DA noche Mar2020



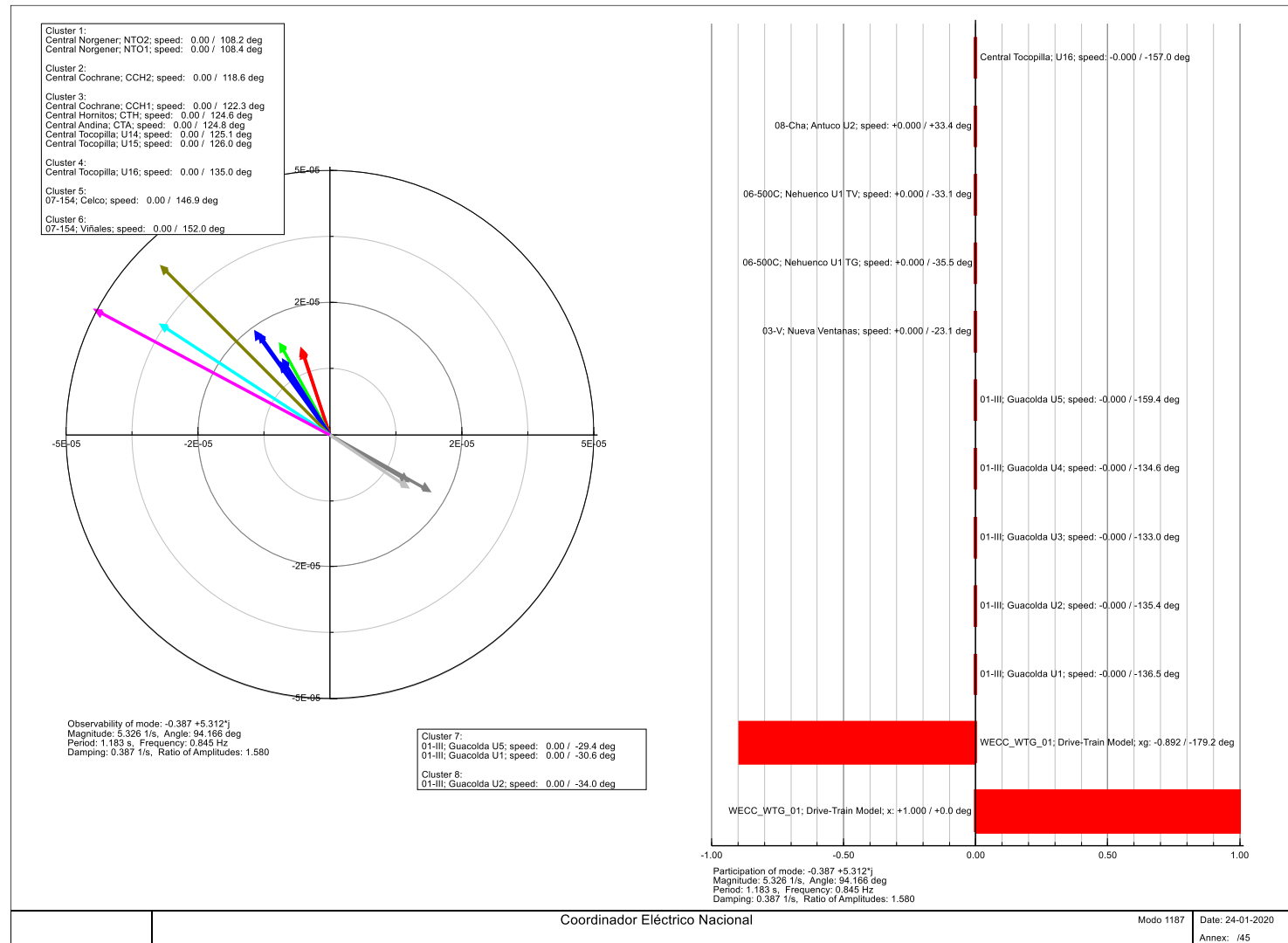
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Modo1263

Date: 24-01-2020

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15.4.5 Modo 1187 E4 DA noche Jun2020



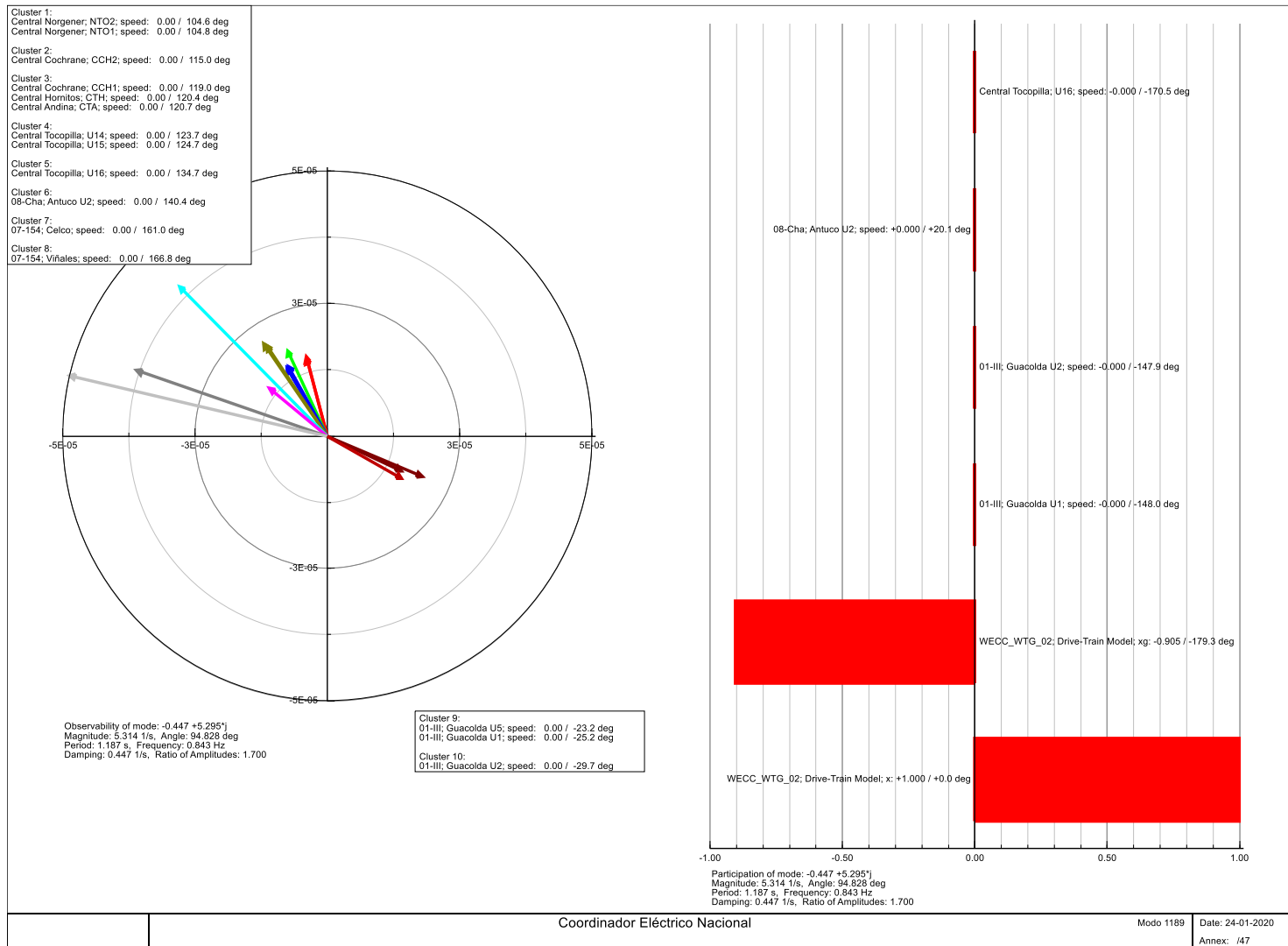
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Modo 1187

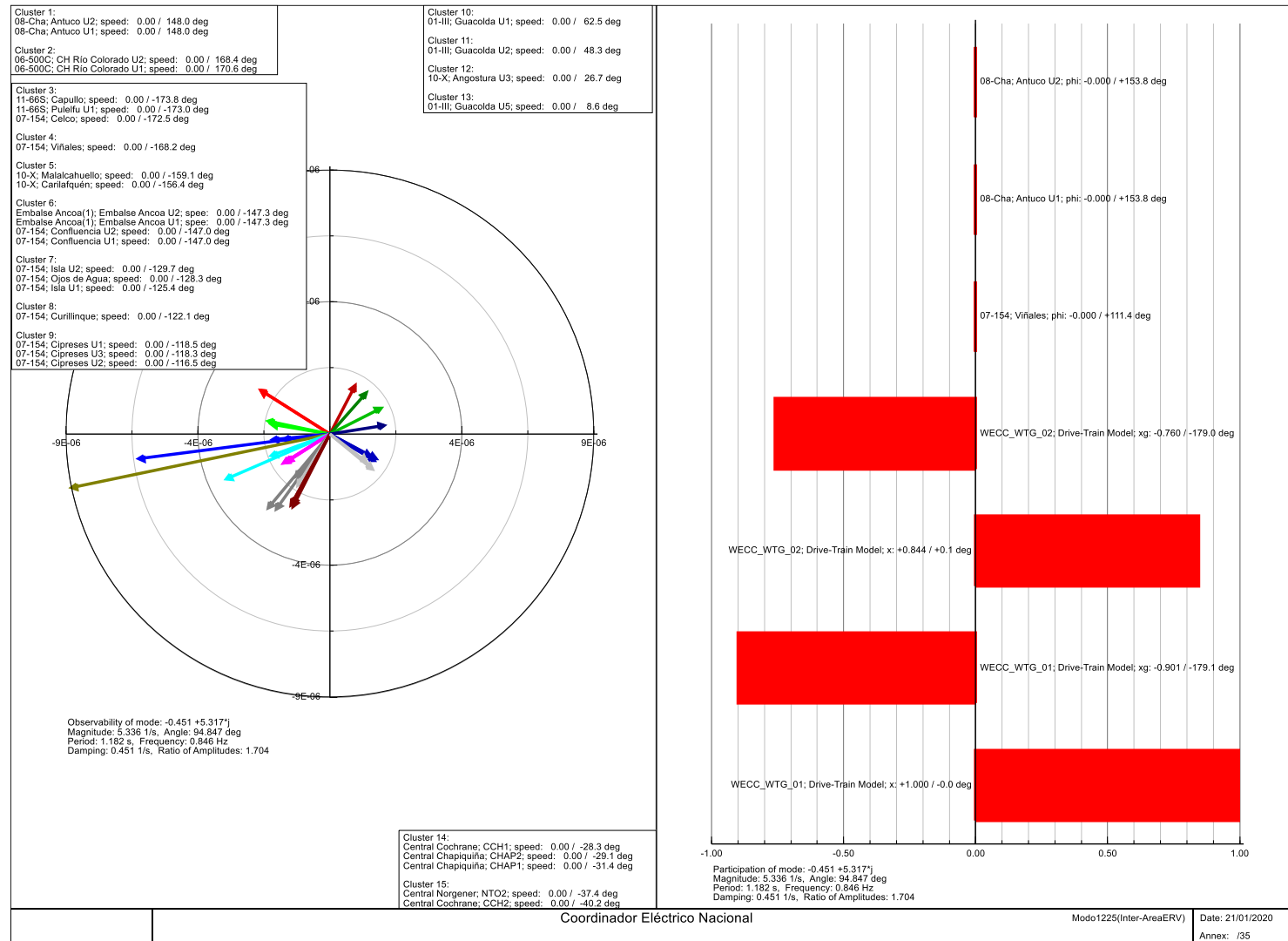
Date: 24-01-2020

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15.4.6 Modo 1189 E4 DA noche Jun2020



15.4.7 Modo 1225 E5 DB día Ene2021



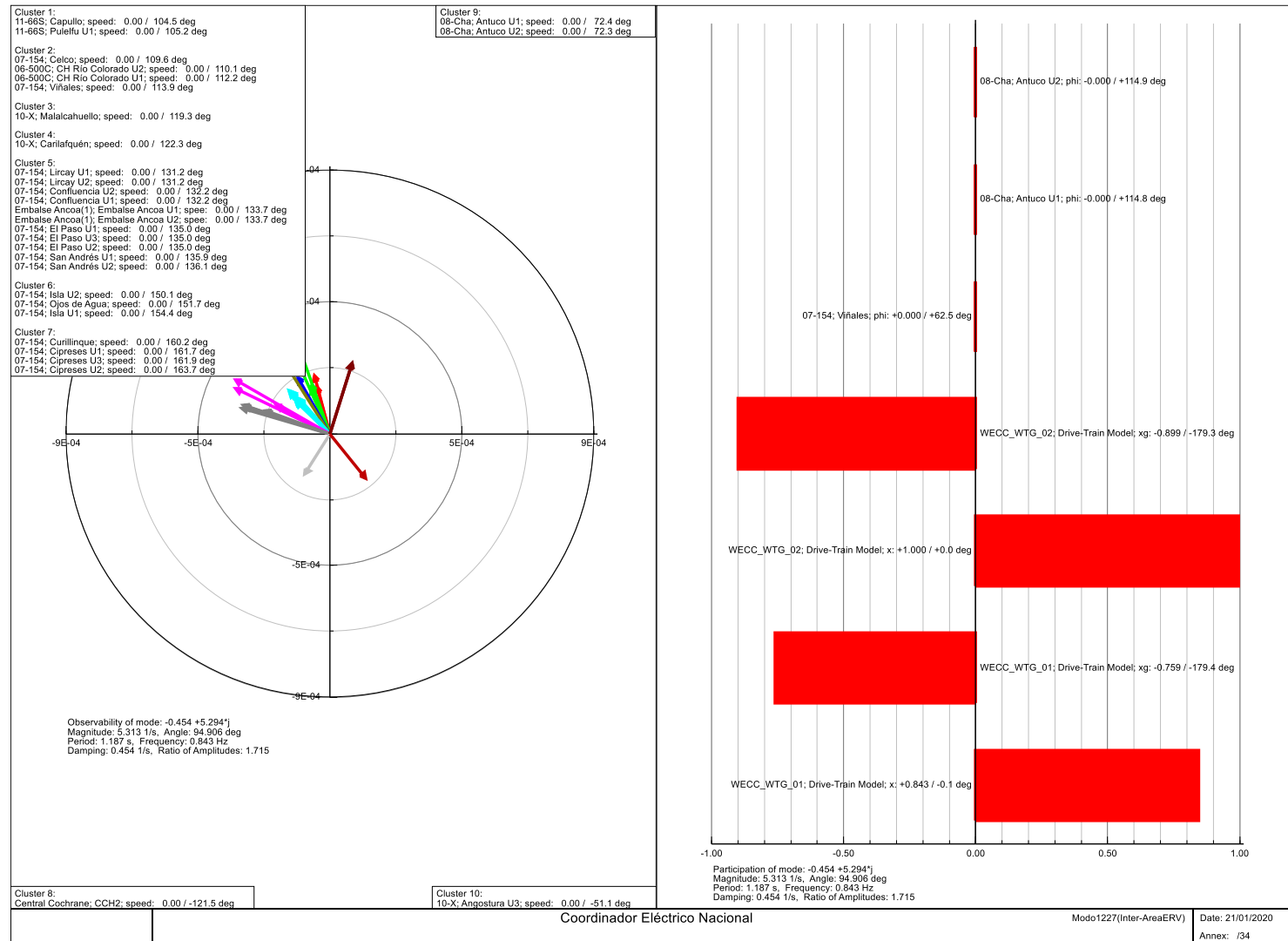
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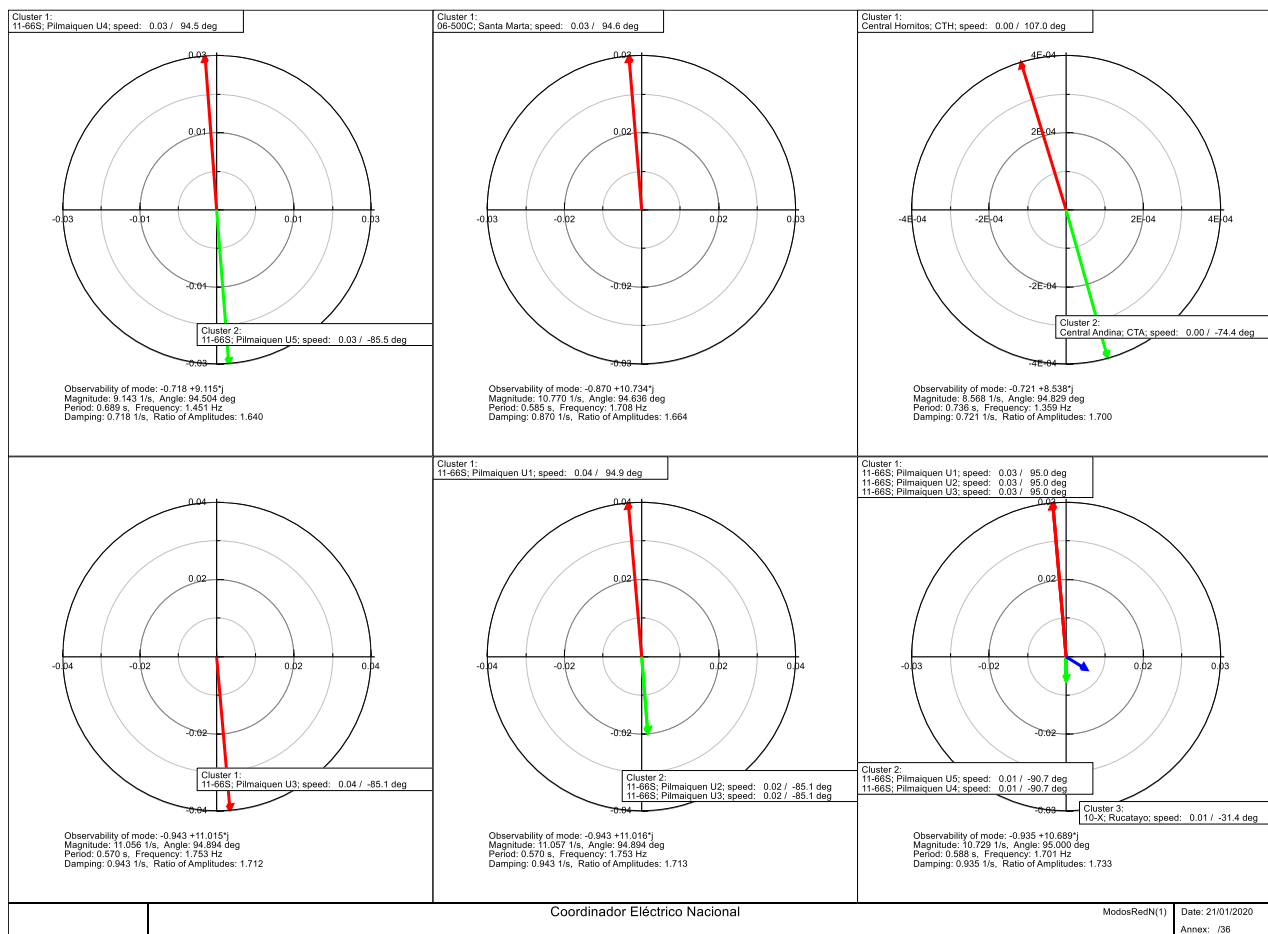
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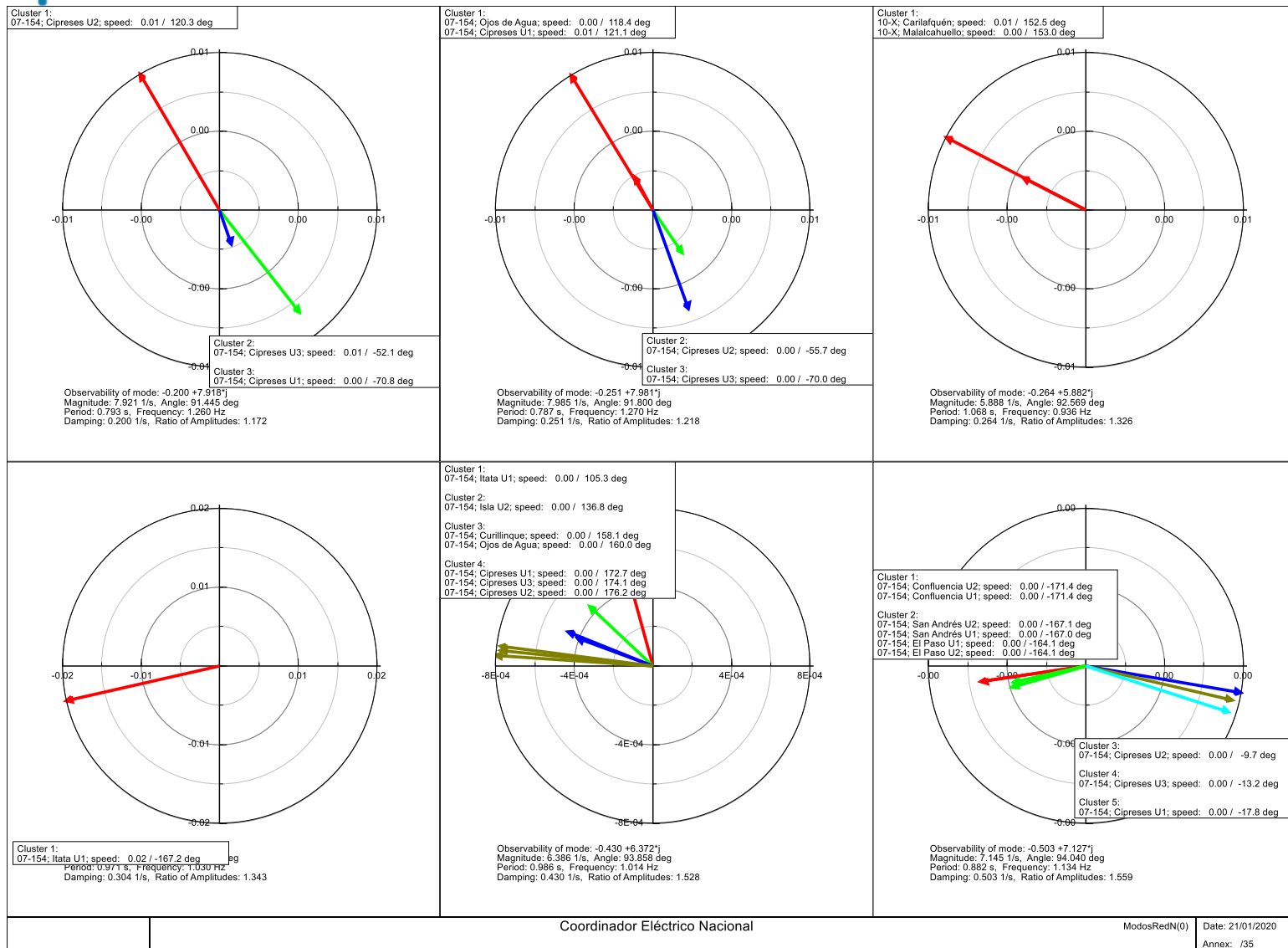


16 ANEXO 2: MODOS CRÍTICOS

16.1 Escenario E1 DA día Dic2020

16.1.1 Red N



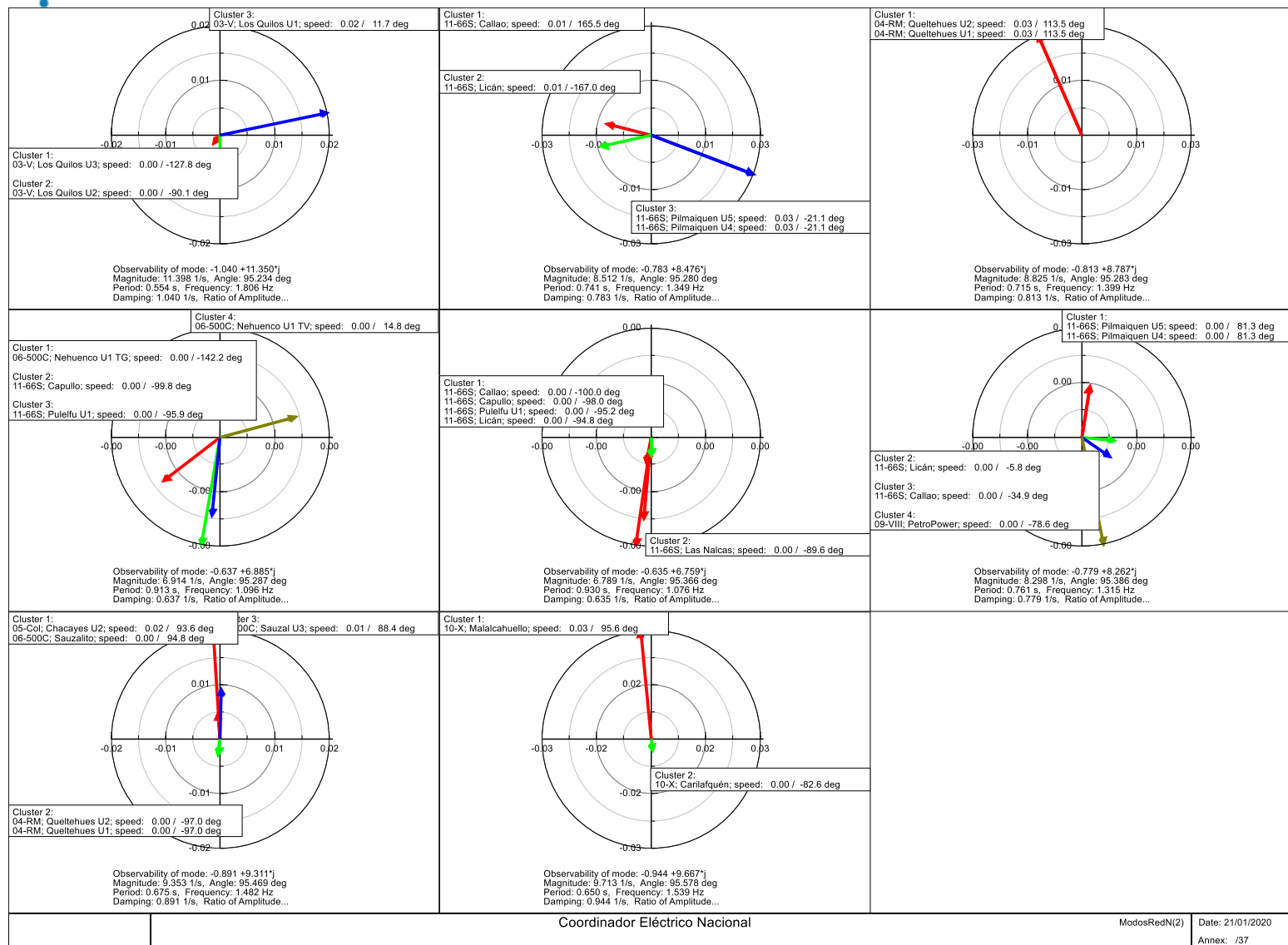


Coordinador Eléctrico Nacional

ModosRedN(0)

Date: 21/01/2020

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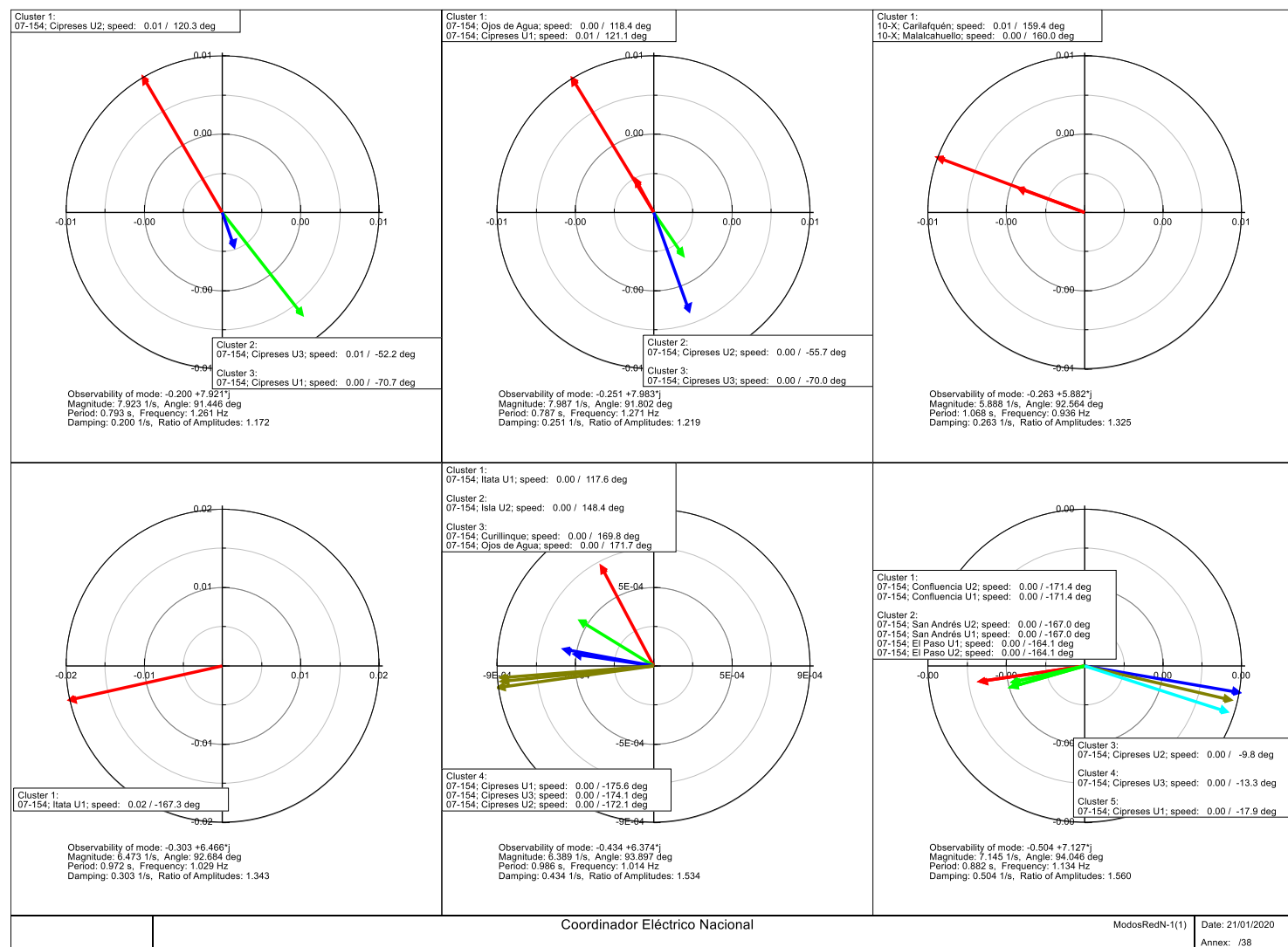
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ModosRedN(2)

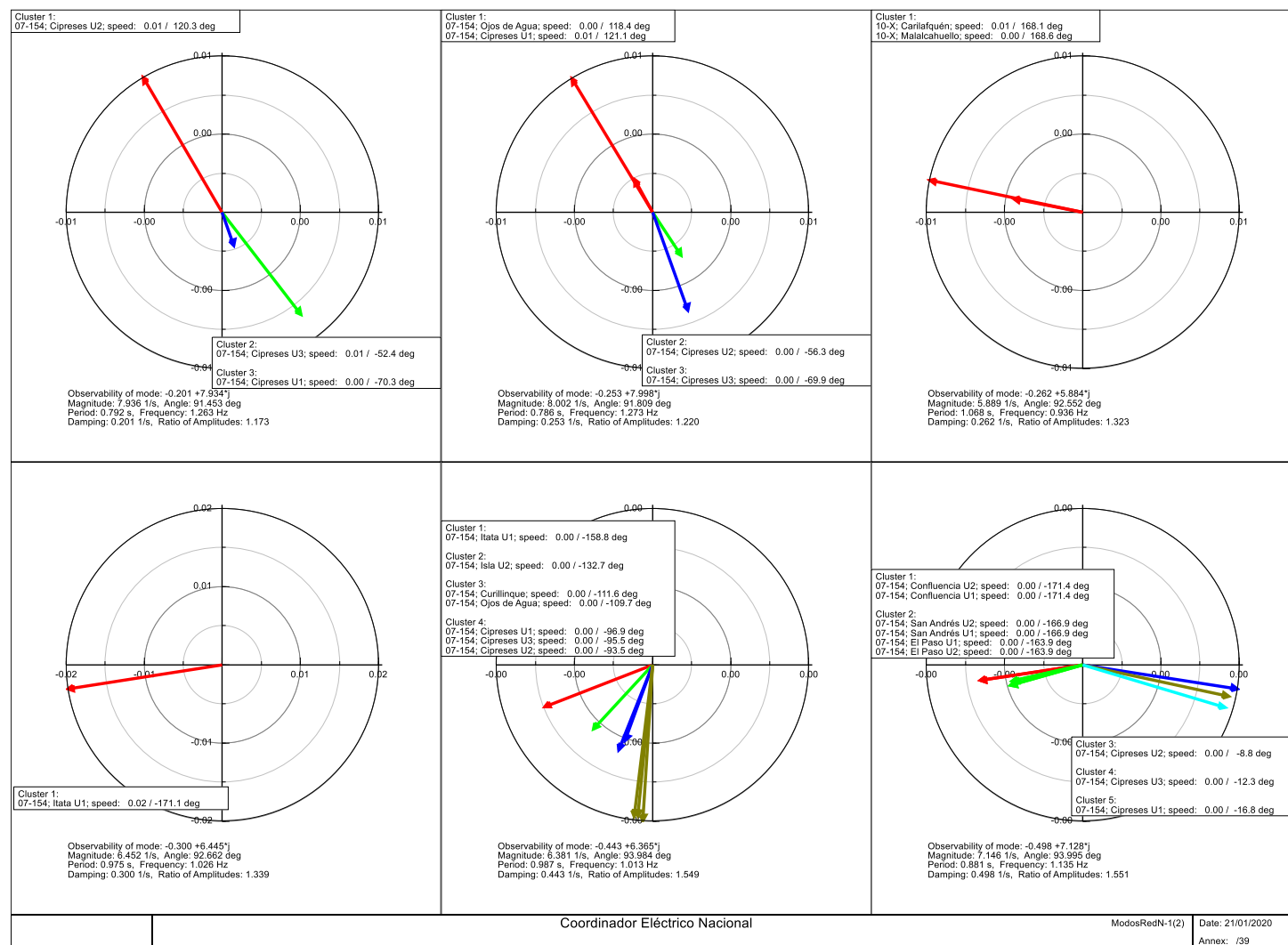
Date: 21/01/2020

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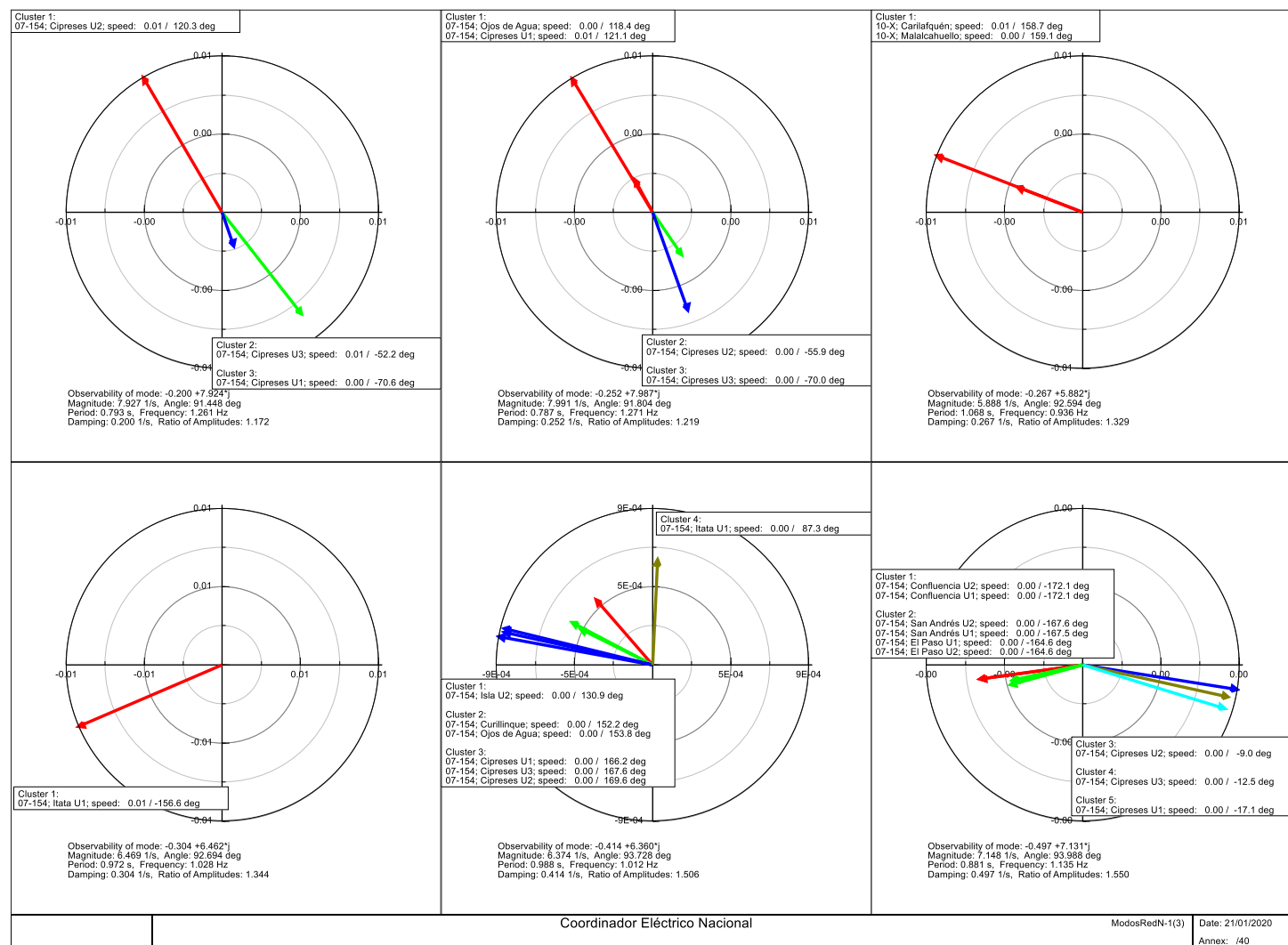
16.1.2 Red N-1 Caso 1.- Changos Cumbres 500 kV



16.1.3 Red N-1 Caso 2.- Nueva Pan de Azúcar - Polpaico 500kV

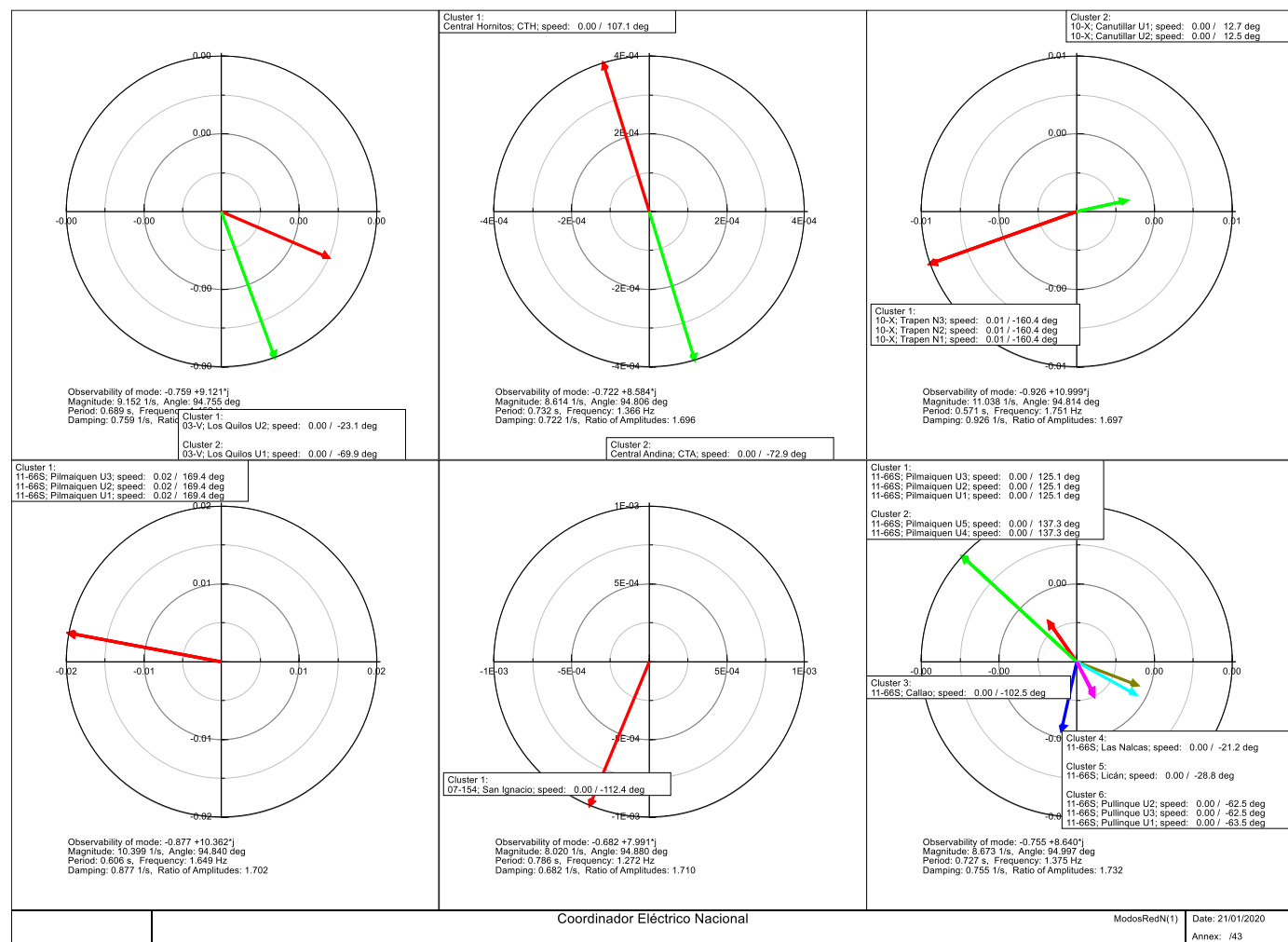


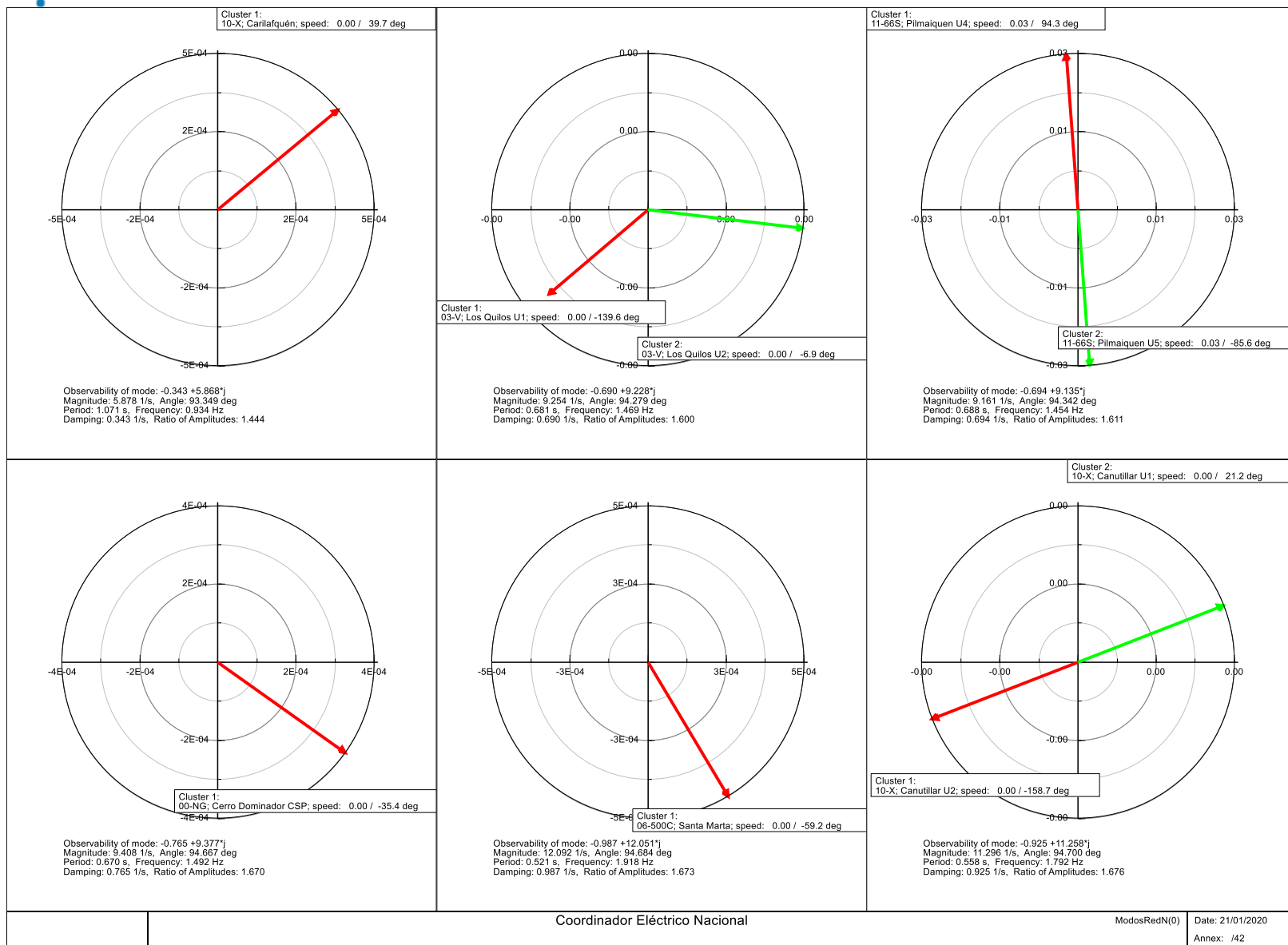
16.1.4 Red N-1 Caso 3.- Charrúa - Ancoa 500kV

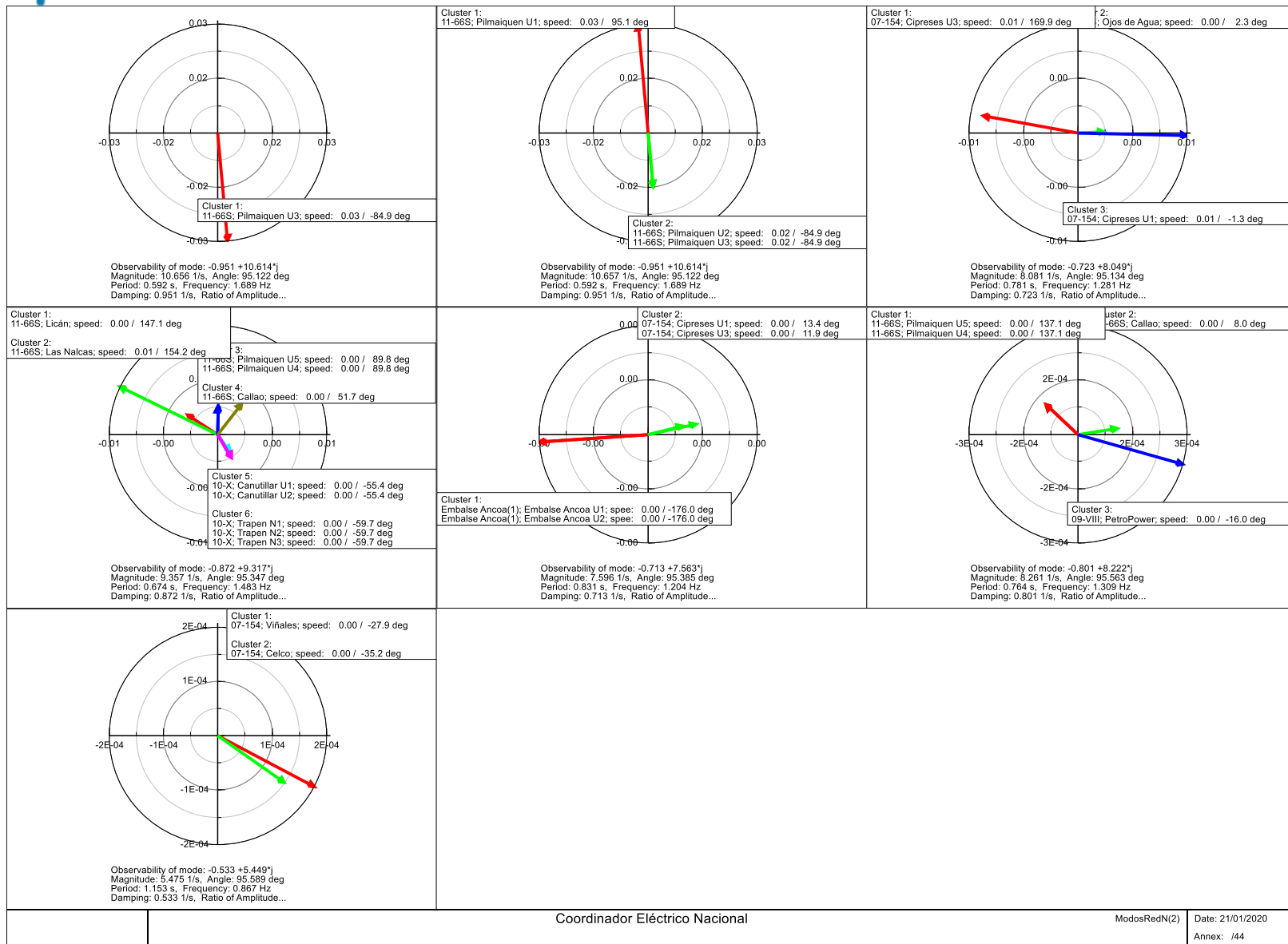


16.2 Escenario E2 DA día Abr2020

16.2.1 Red N

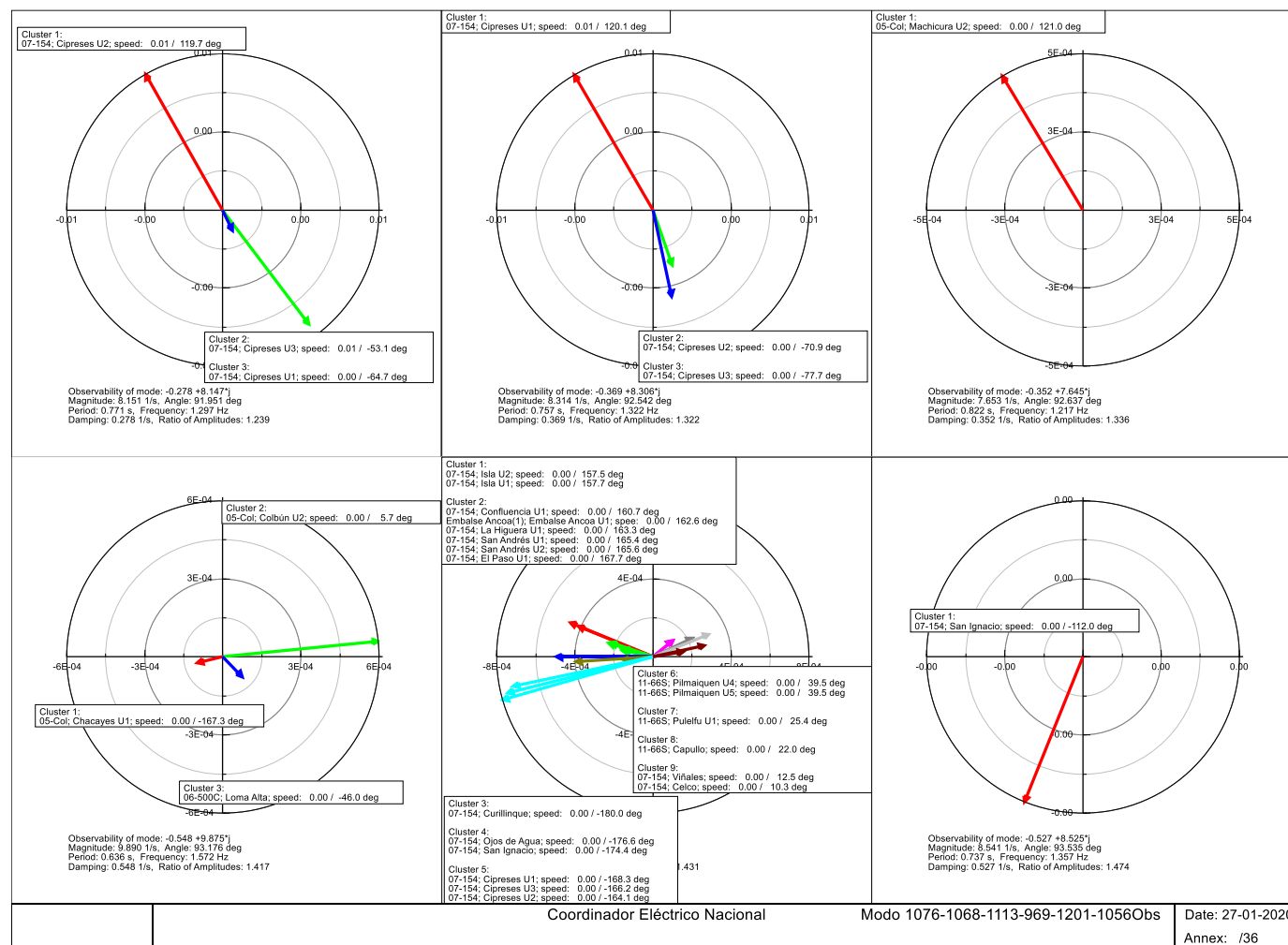


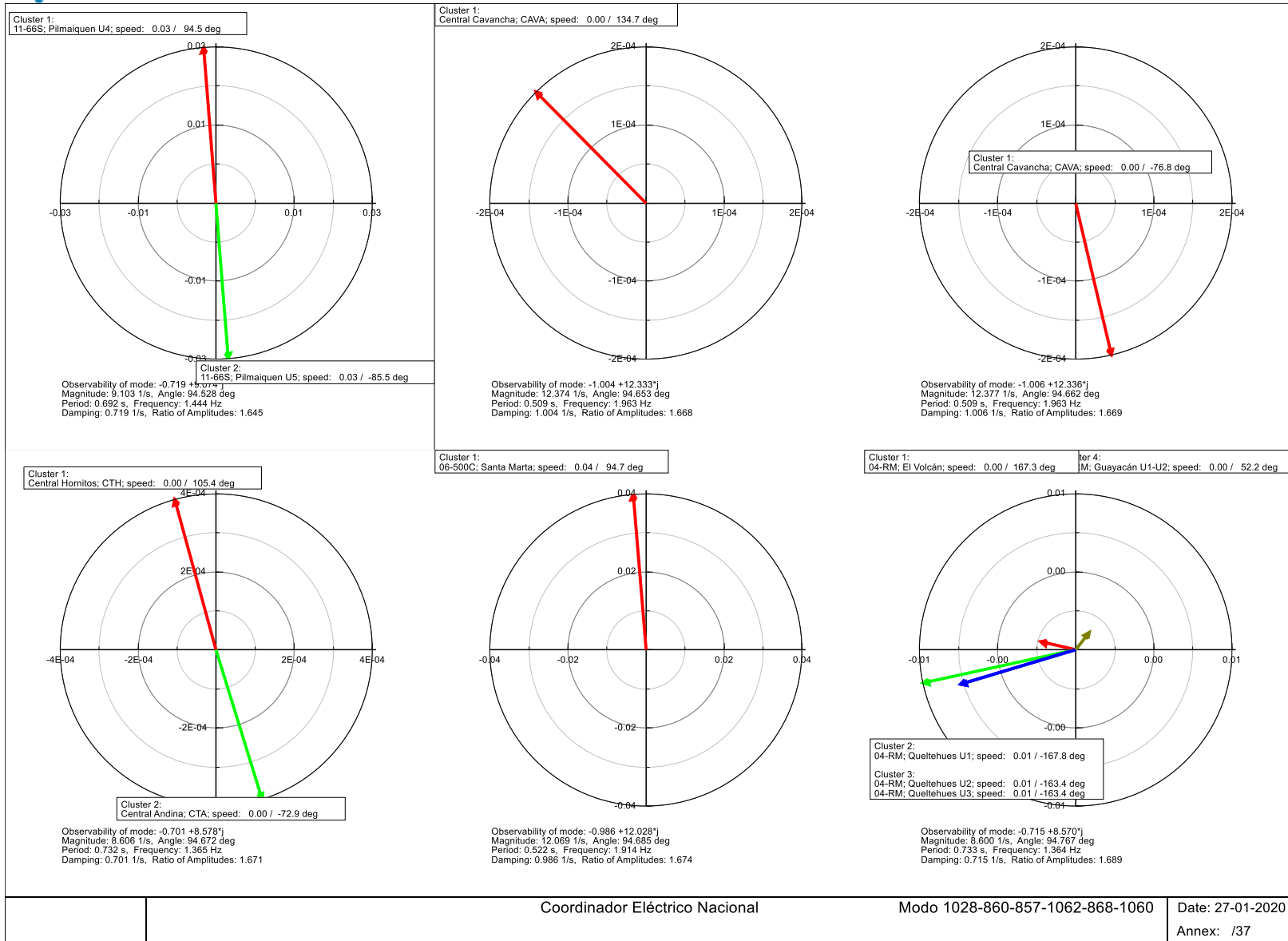


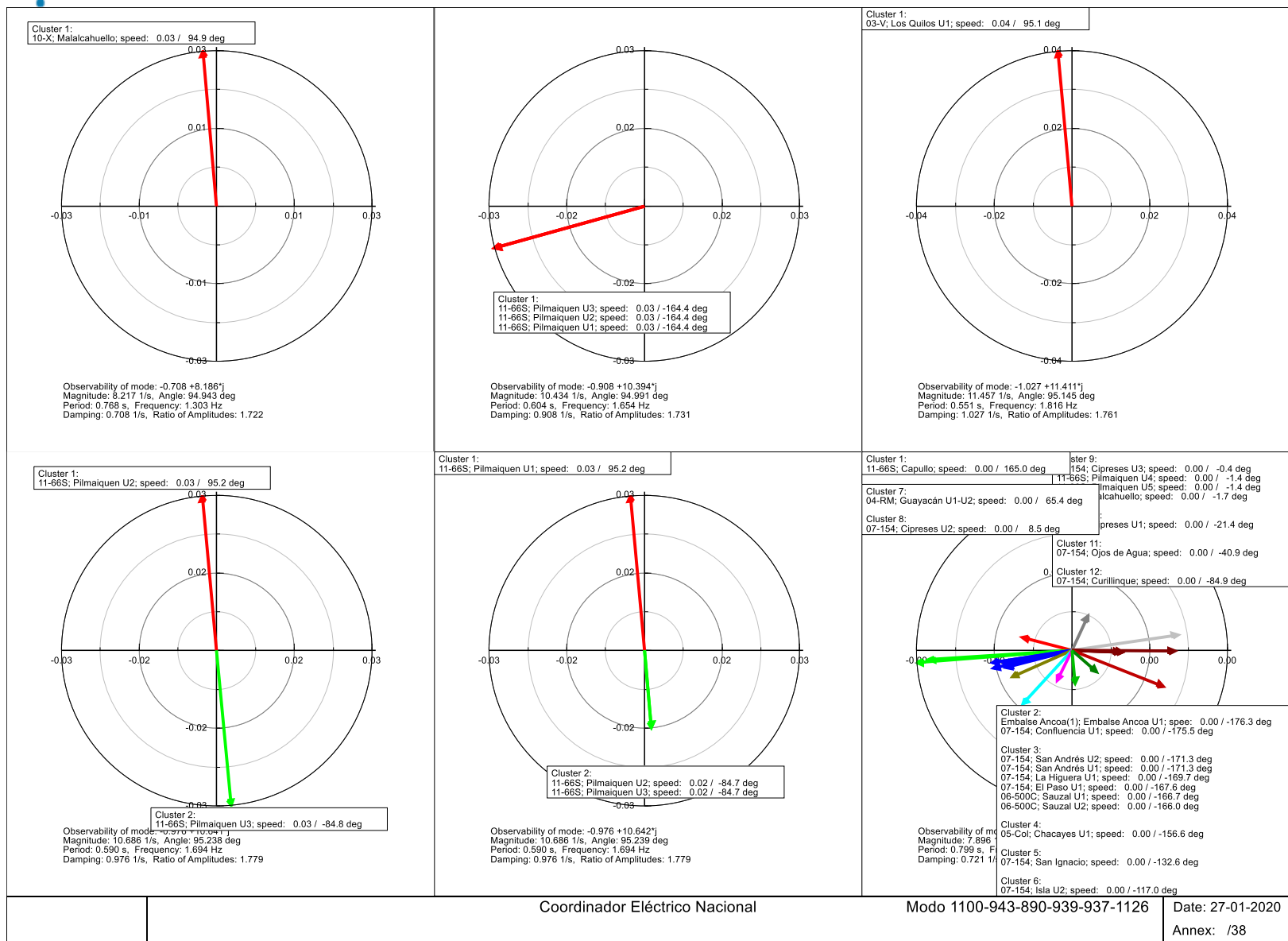


16.3 Escenario E3 DA noche Mar2020

16.3.1 Red N





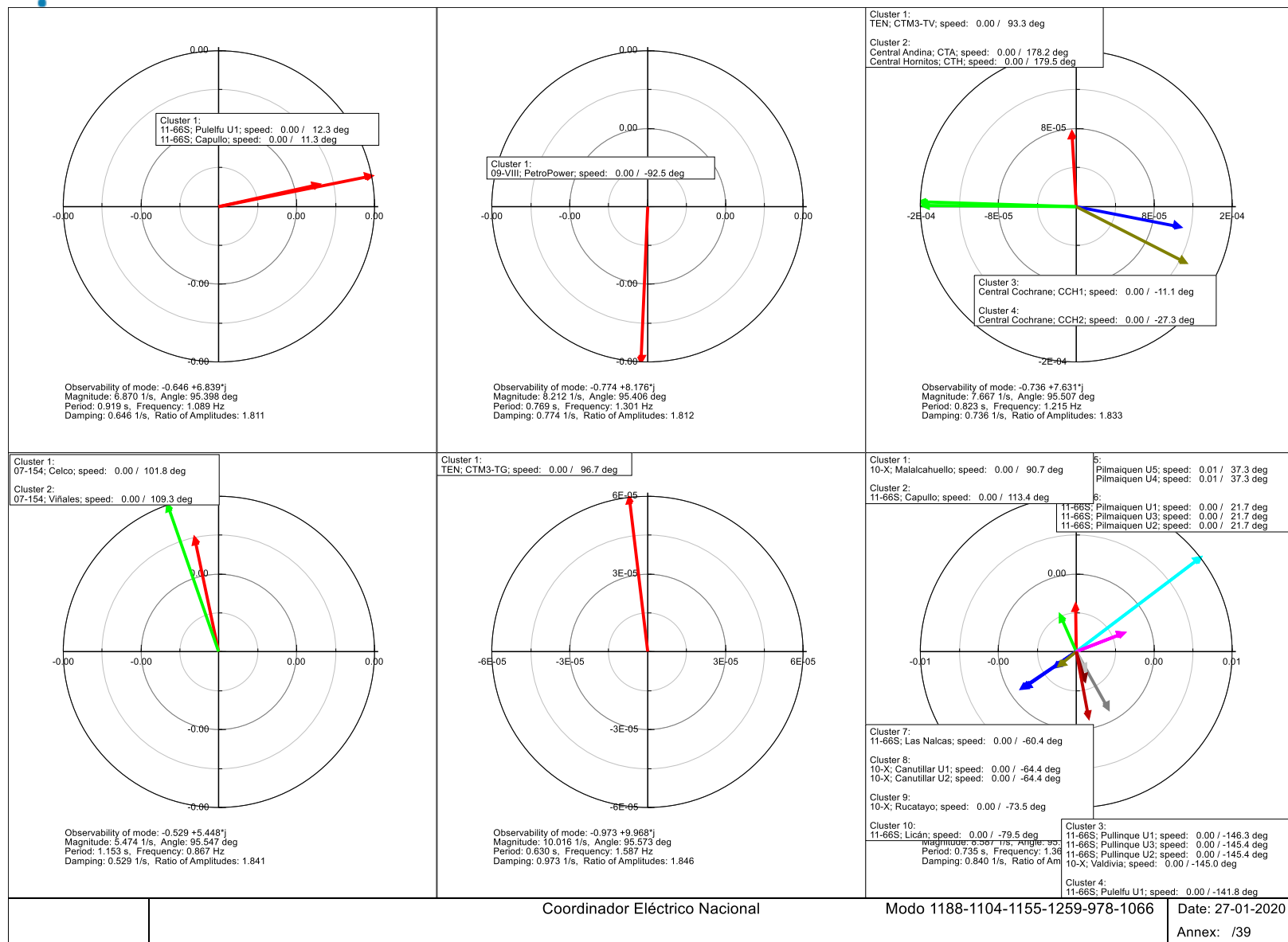


Coordinador Eléctrico Nacional

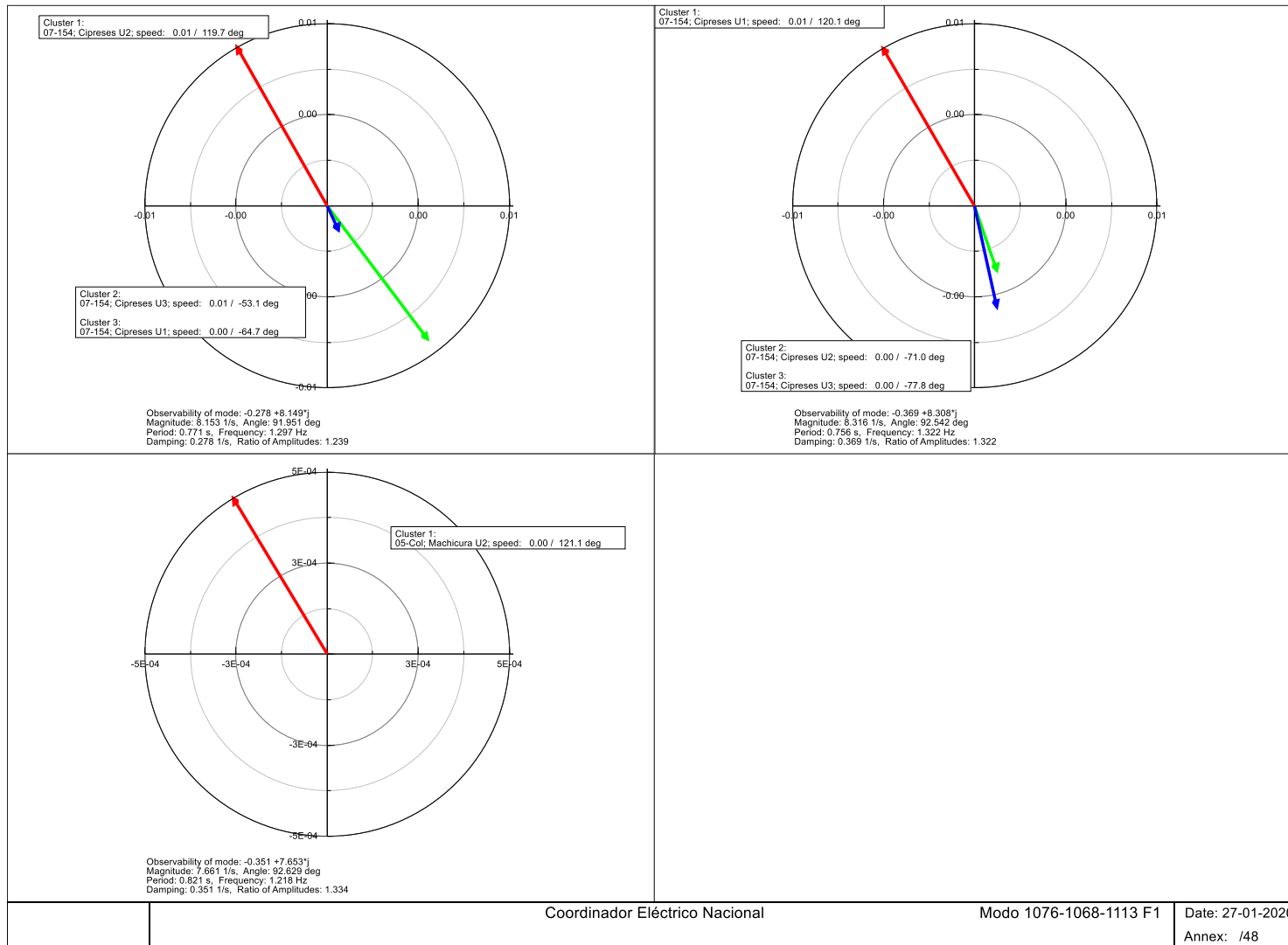
Modo 1100-943-890-939-937-1126

Date: 27-01-2020

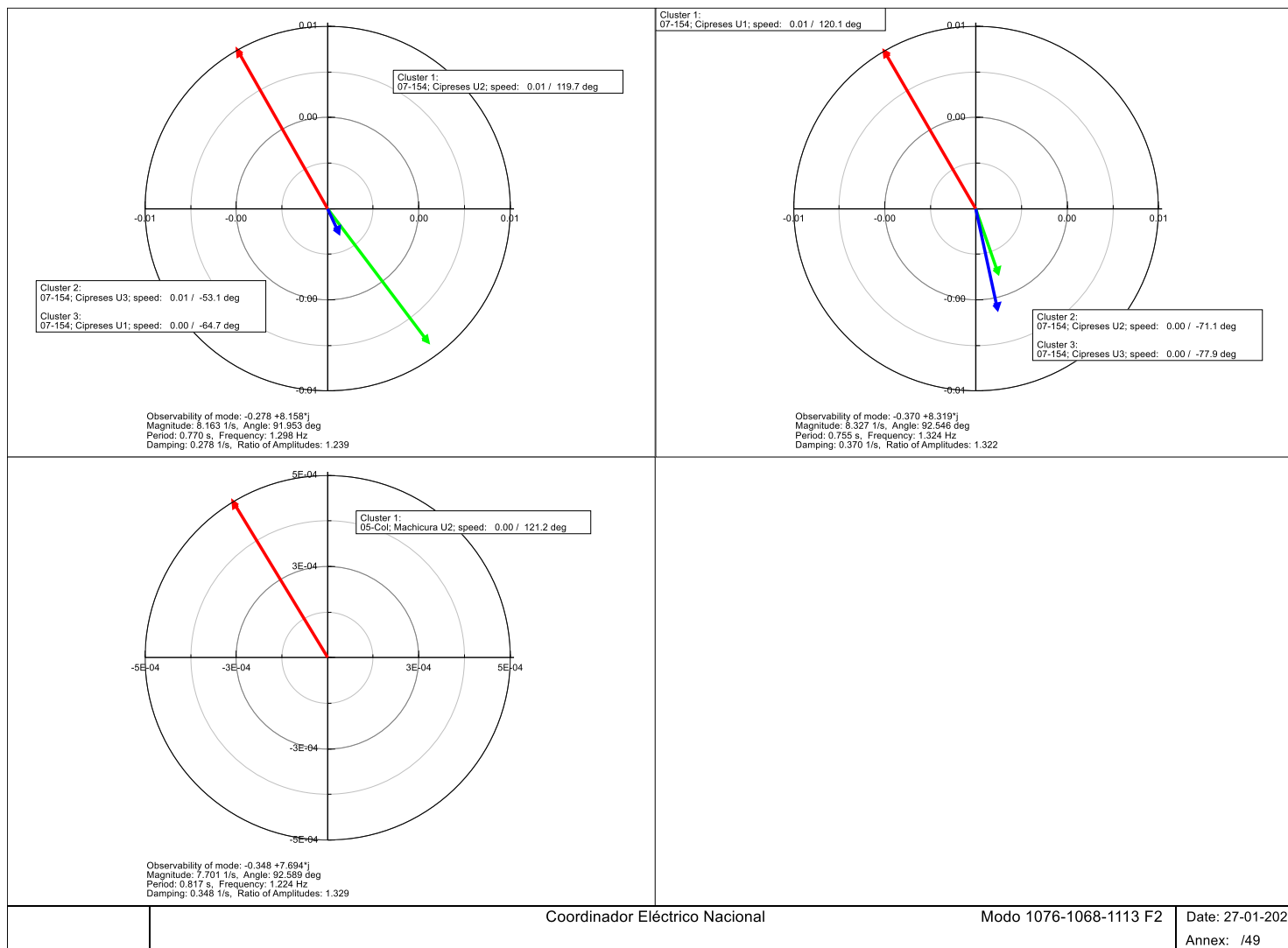
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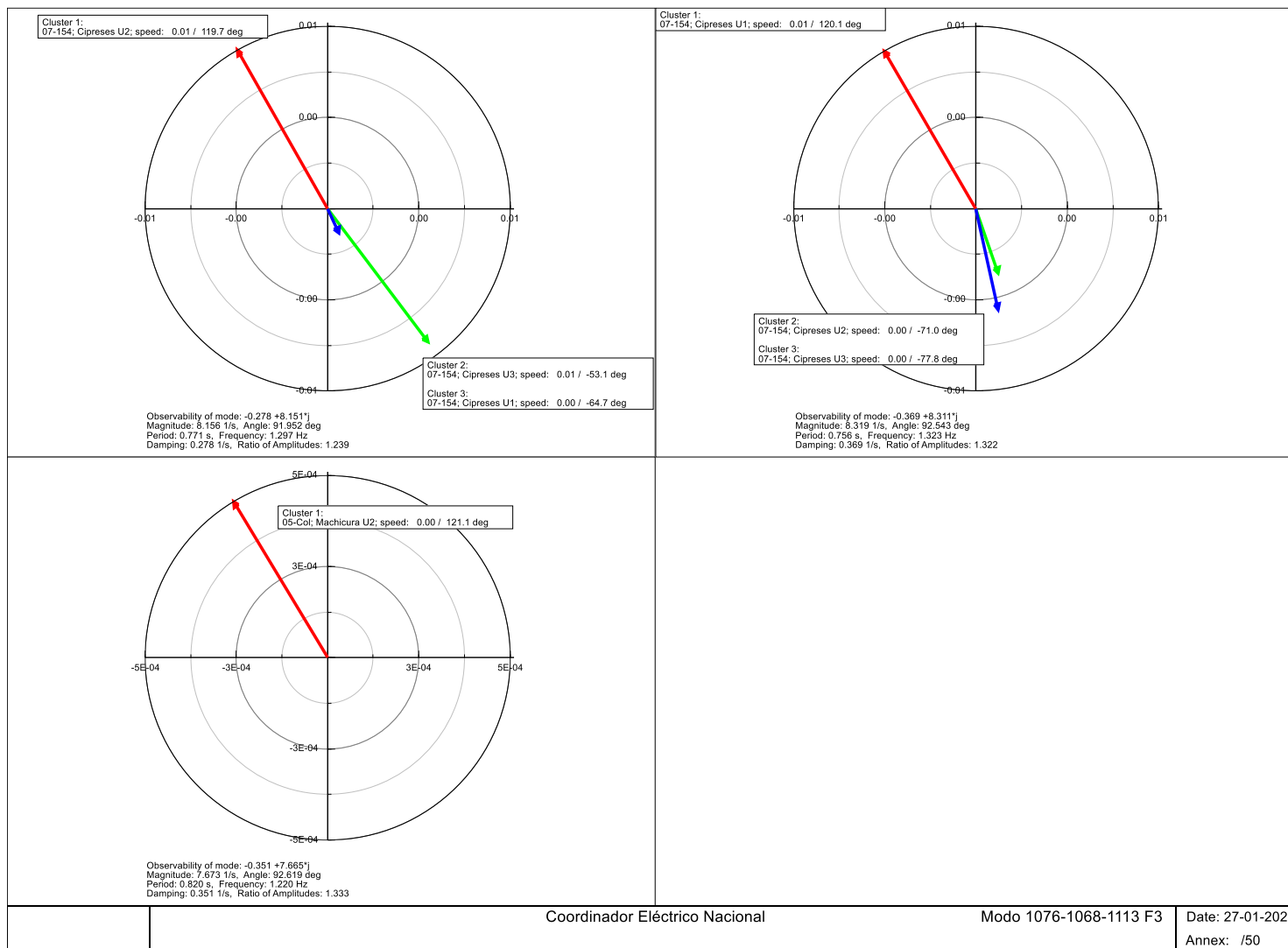
16.3.2 Red N-1 Caso 1.- Changos Cumbres 500 kV



16.3.3 Red N-1 Caso 2.- Nueva Pan de Azúcar - Polpaico 500 kV

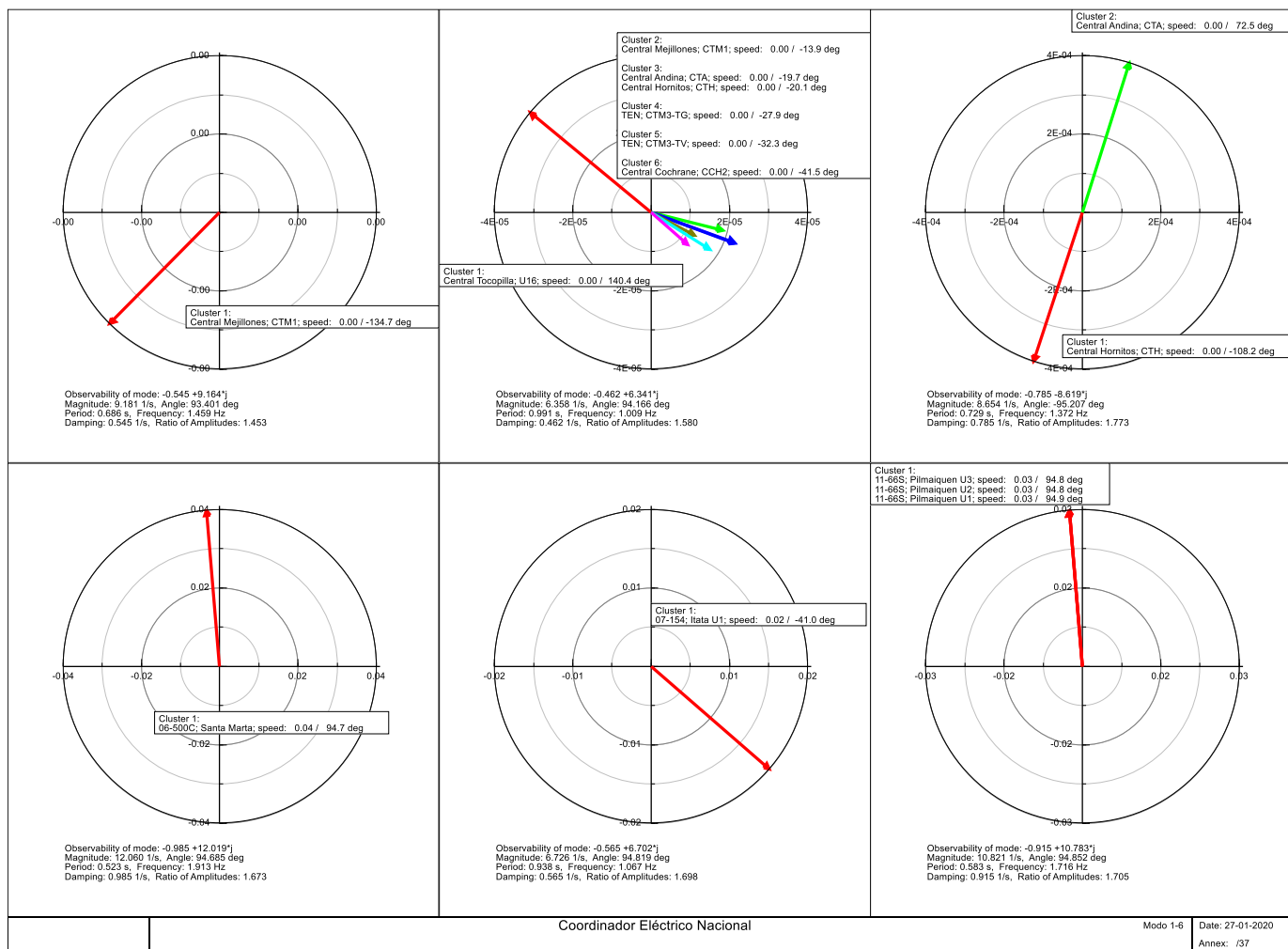


16.3.4 Red N-1 Caso 3.- Charrúa - Ancoa 500 kV



16.4 Escenario E4 DA noche Jun2020

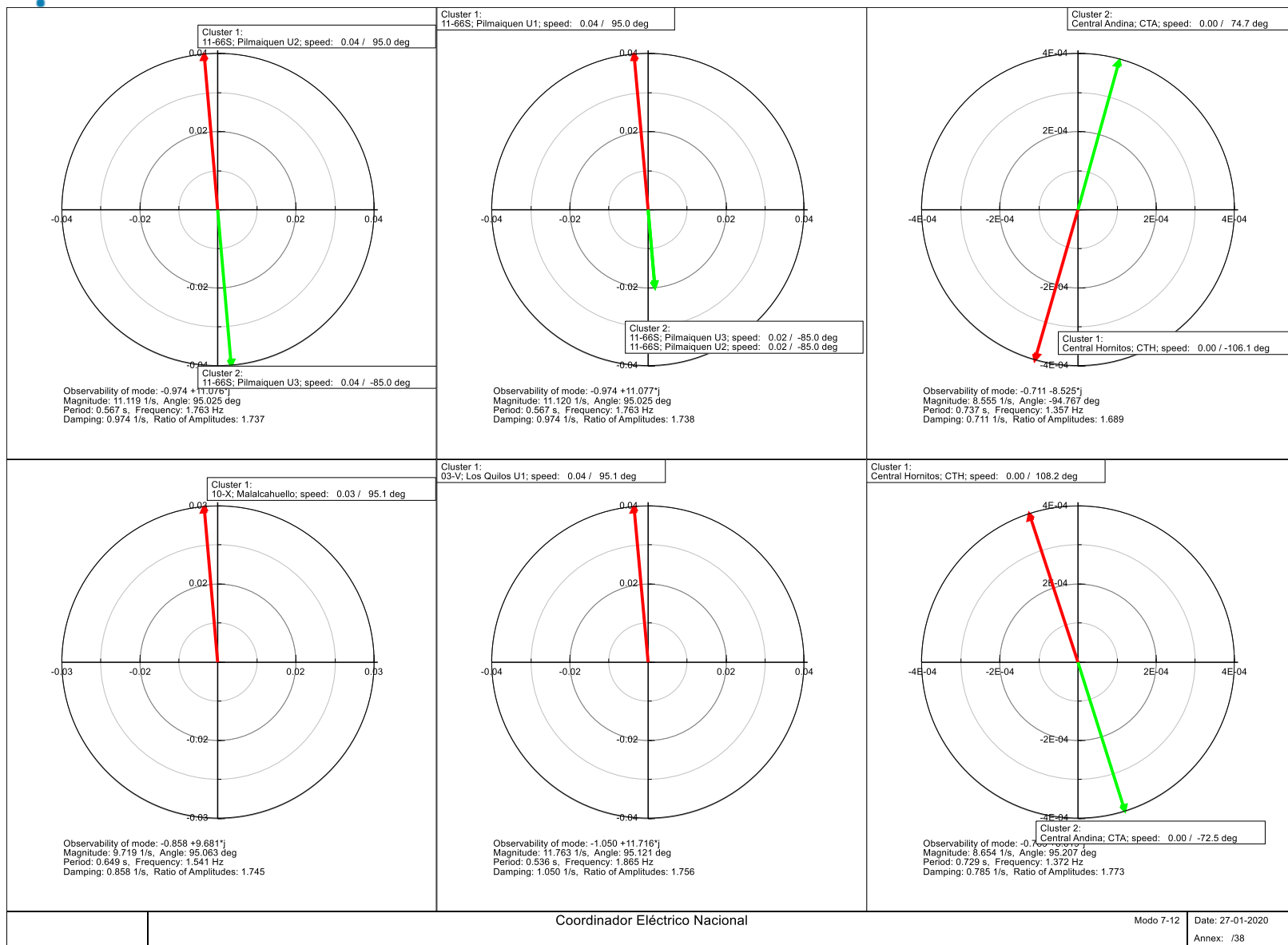
16.4.1 Red N

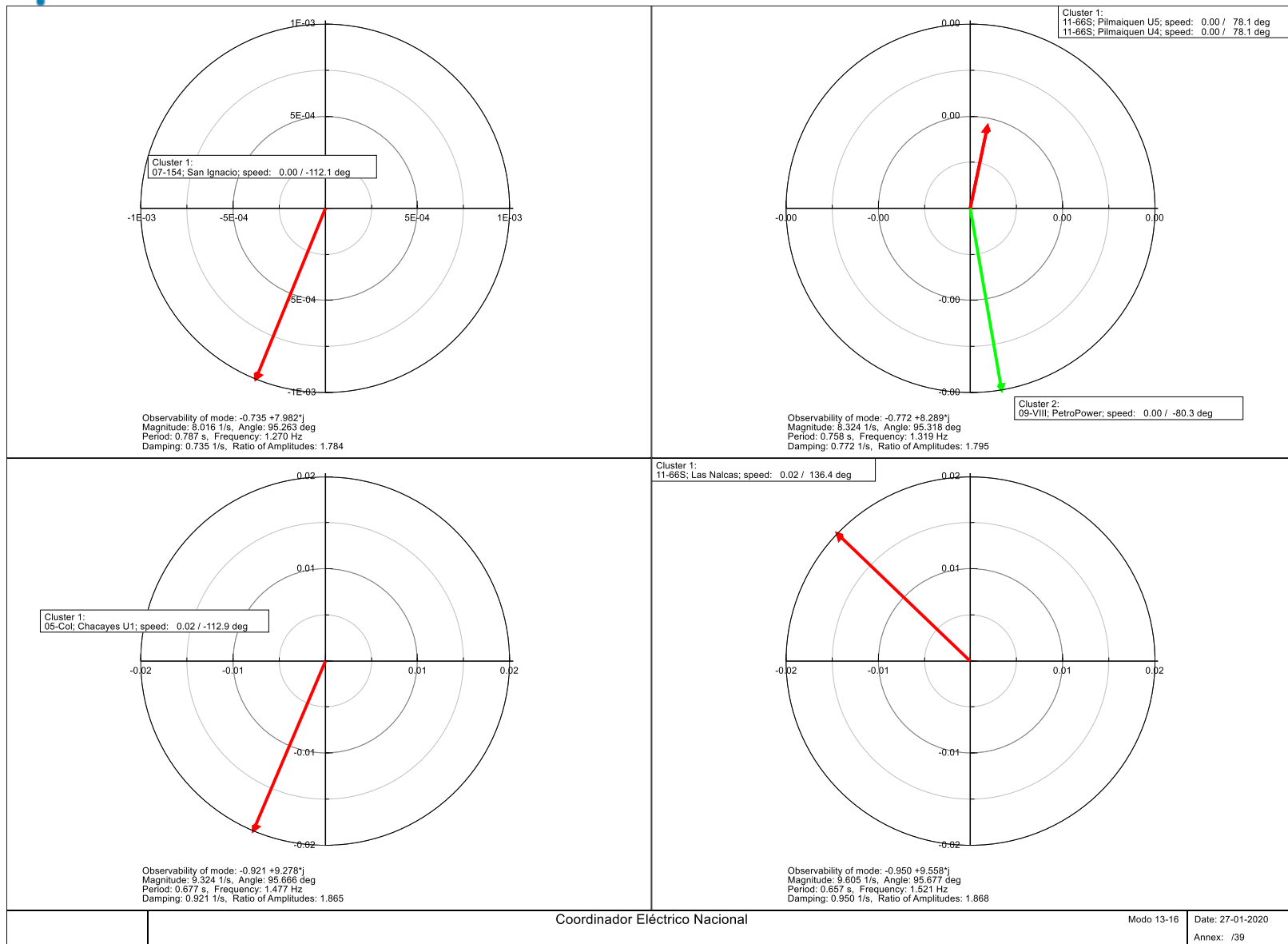


Coordinador Eléctrico Nacional

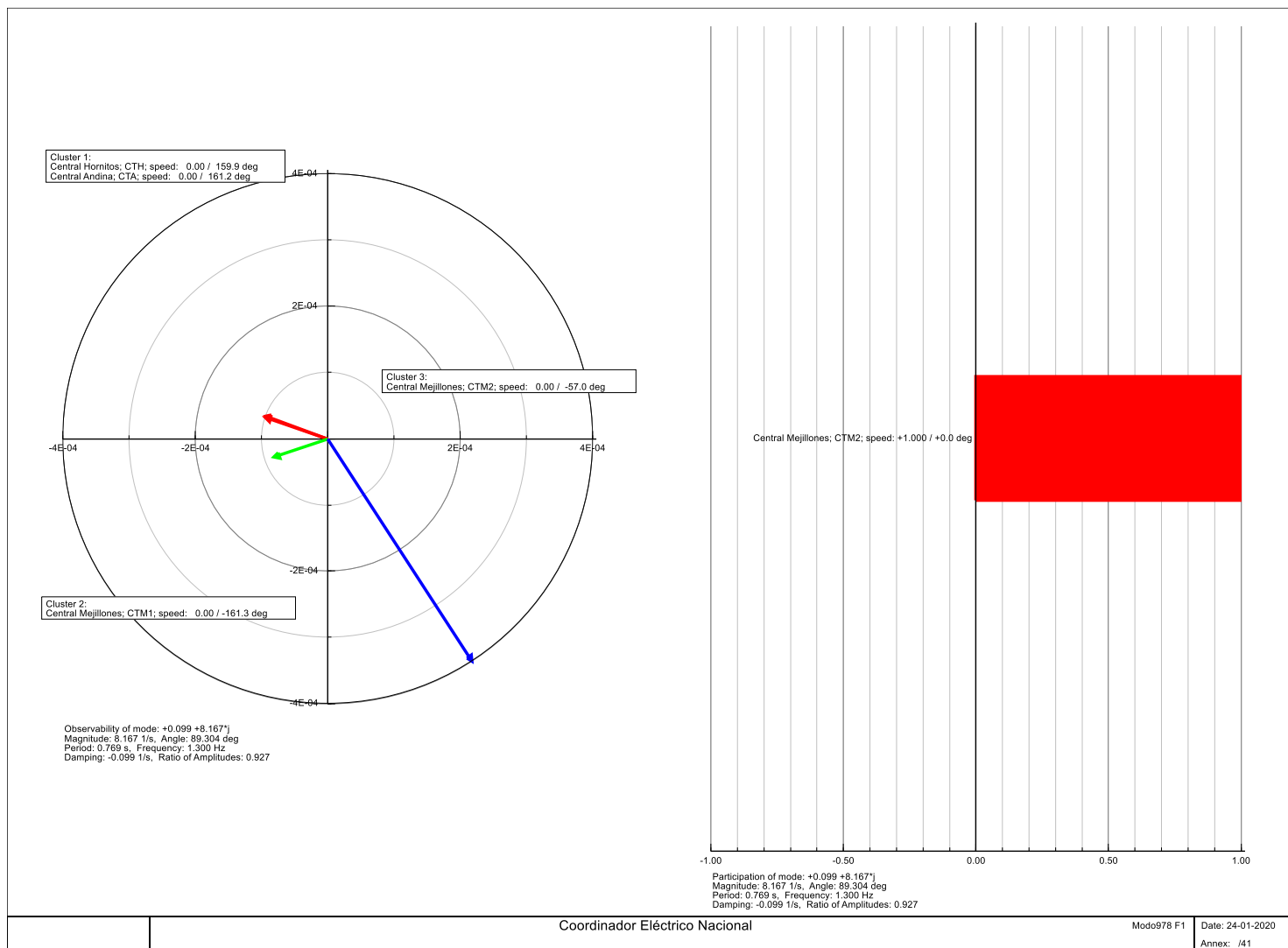
Modo 1-6 Date: 27-01-2020

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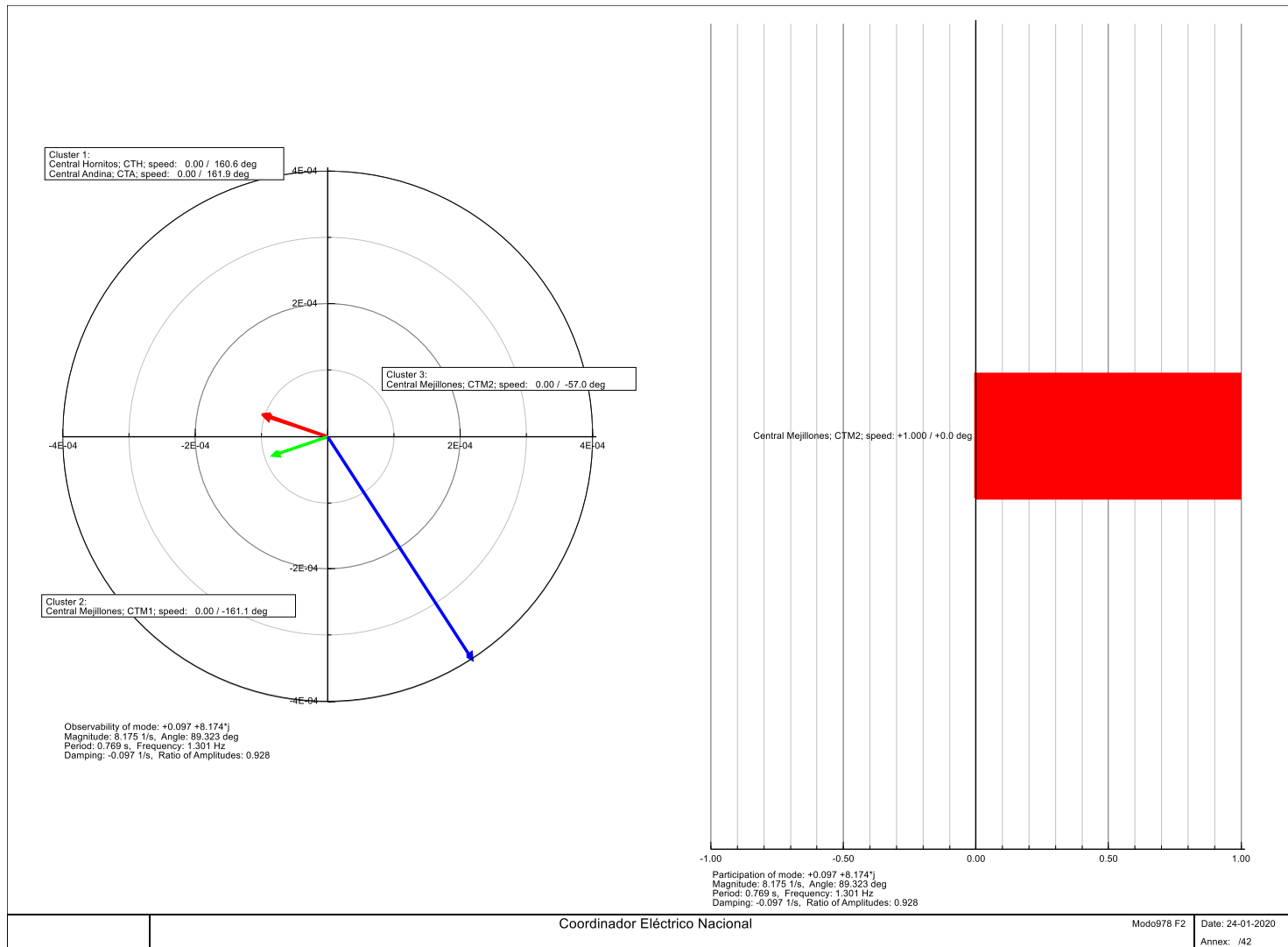




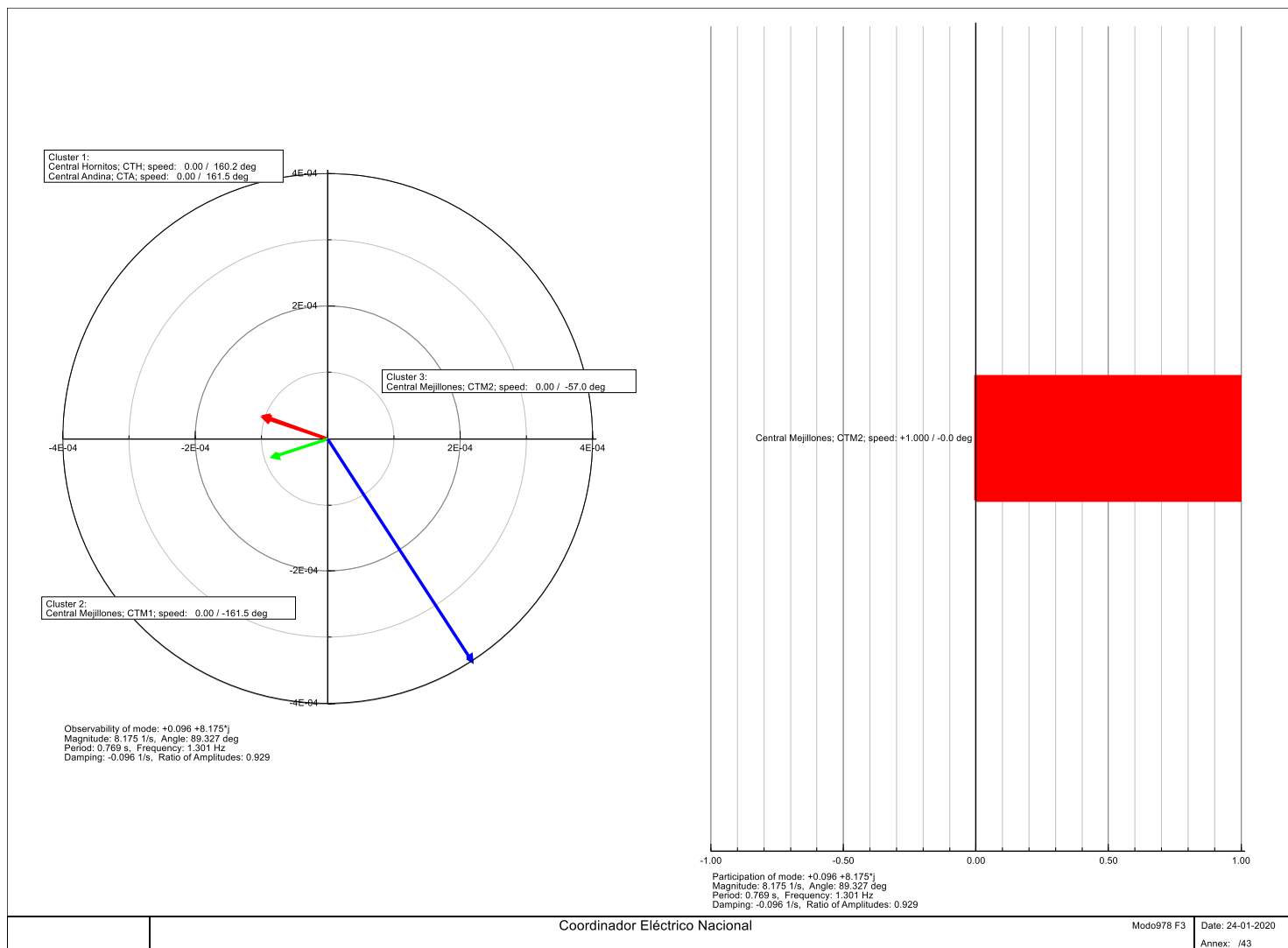
16.4.2 Red N-1 Caso 1.- Changos Cumbres 500 kV



16.4.3 Red N-1 Caso 2.- Nueva Pan de Azúcar - Polpaico 500 kV

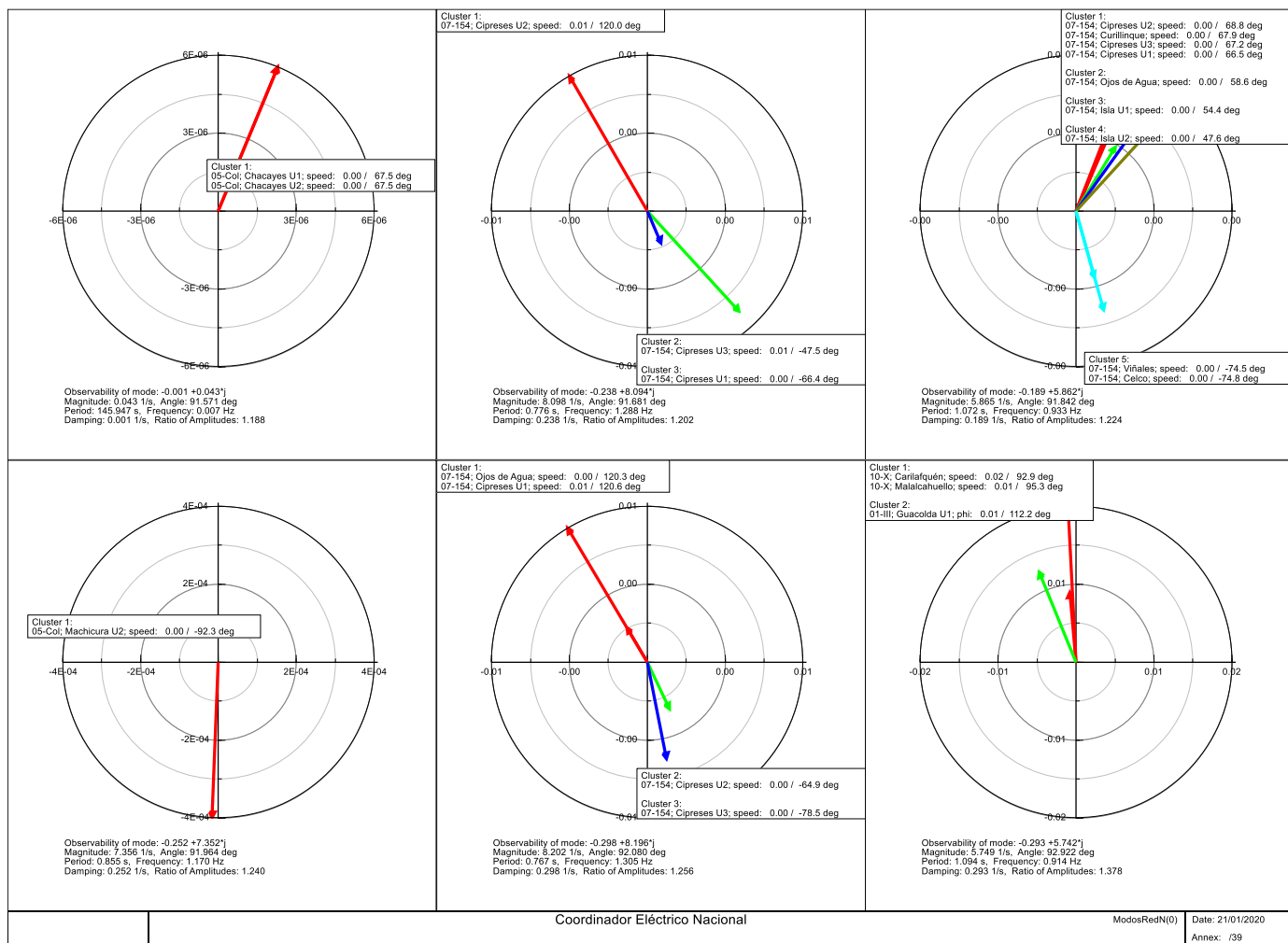


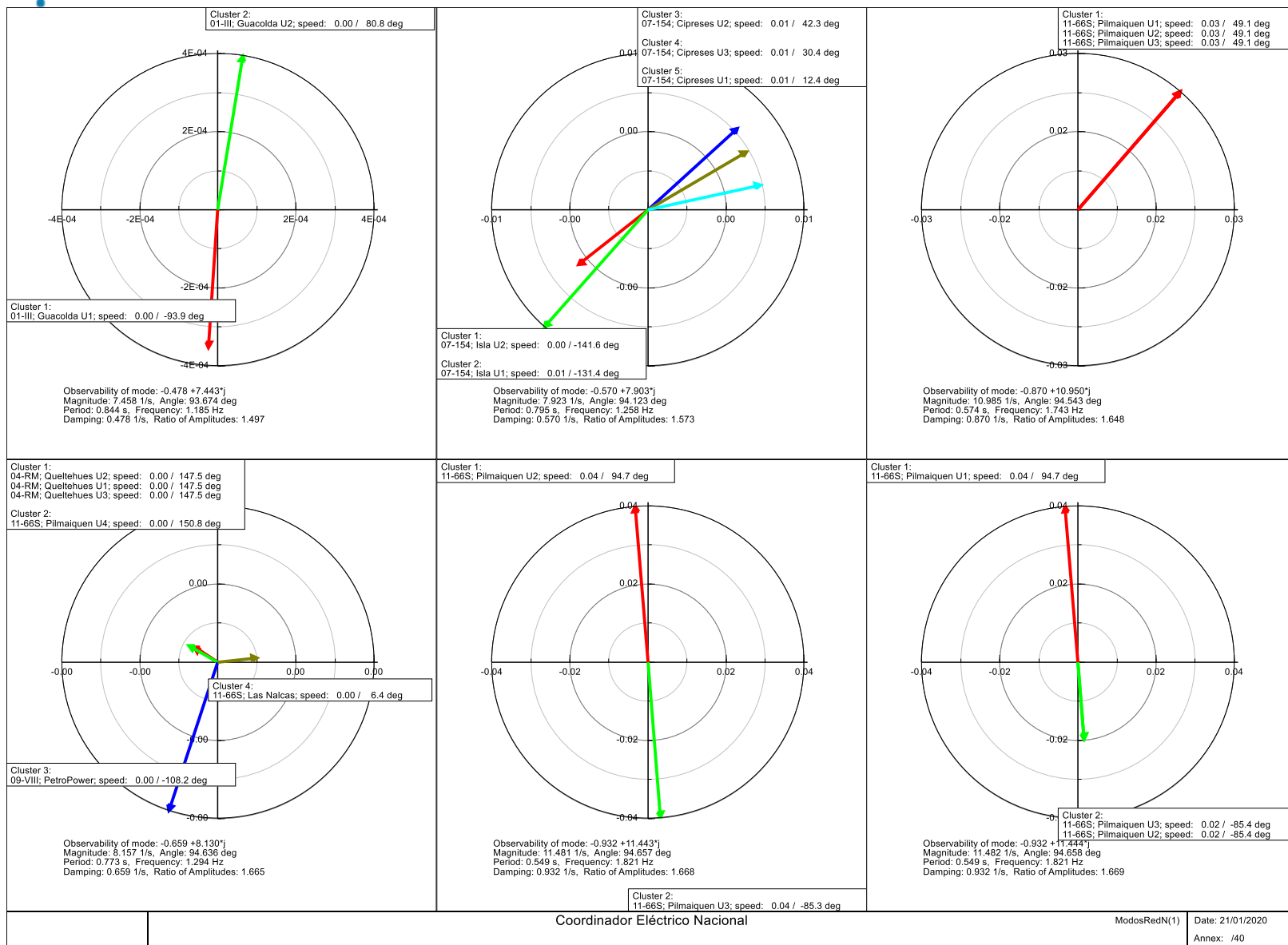
16.4.4 Red N-1 Caso 3.- Charrúa - Ancoa 500 kV

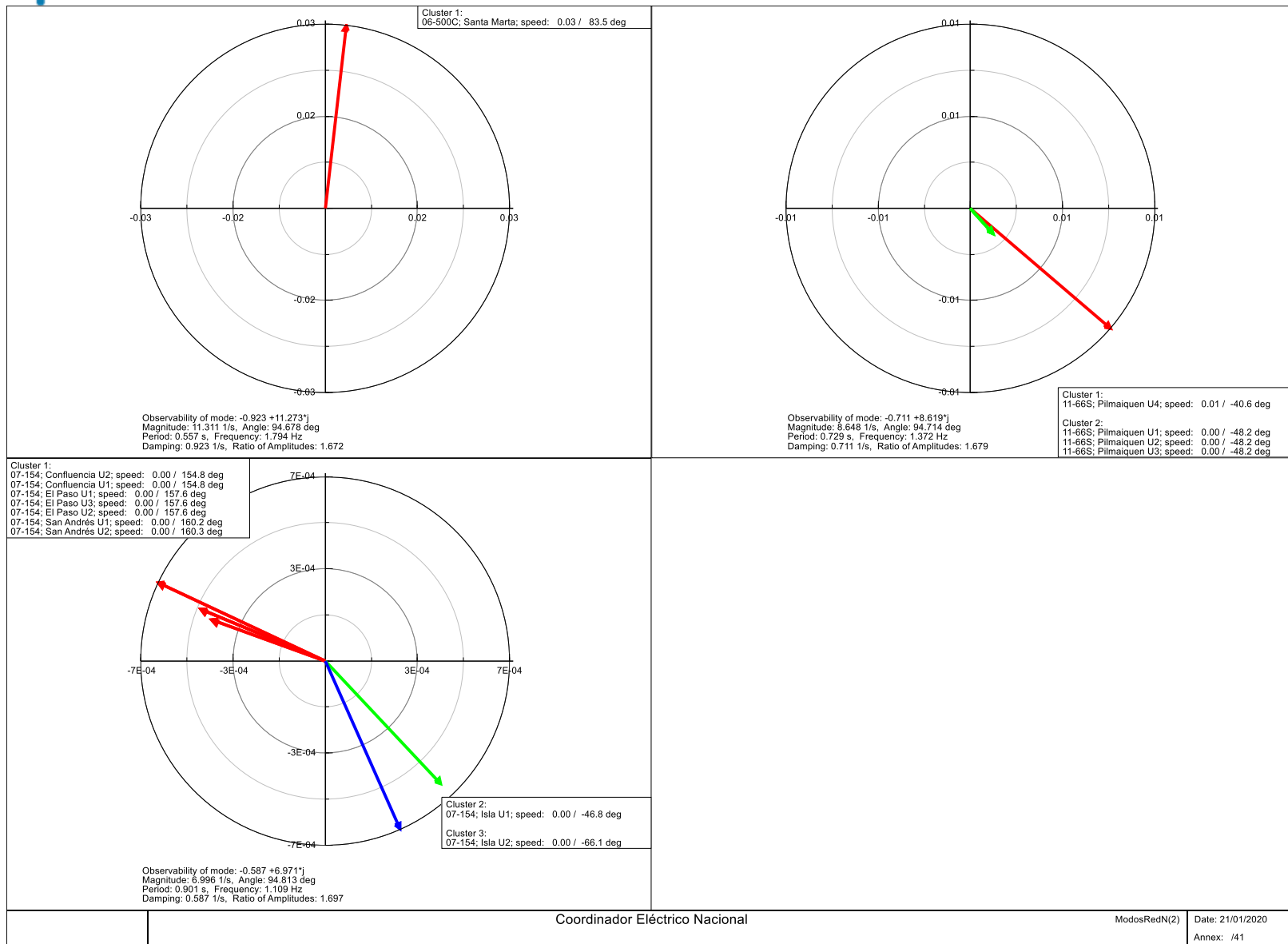


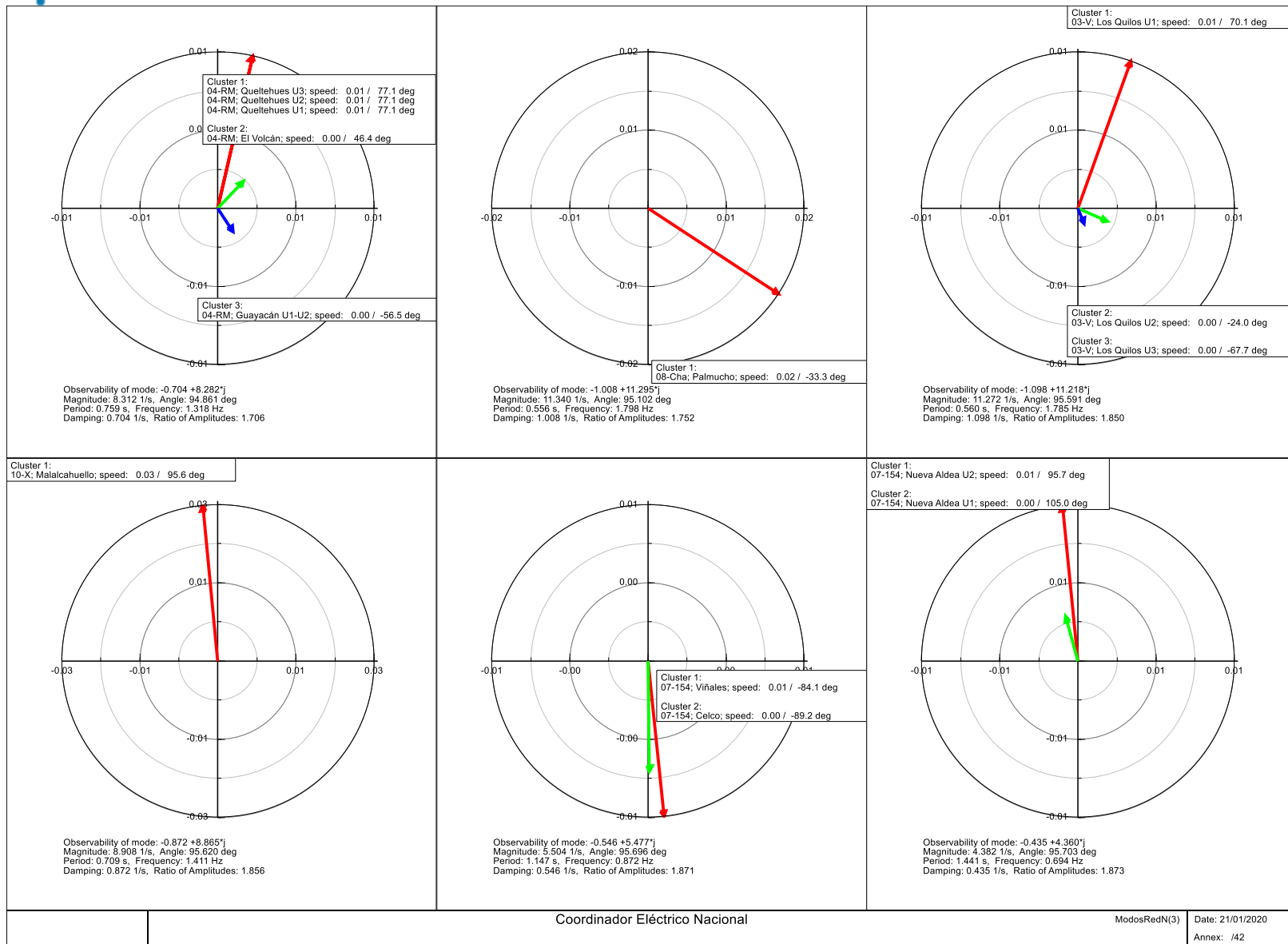
16.5 Escenario E5 DB Ene2021

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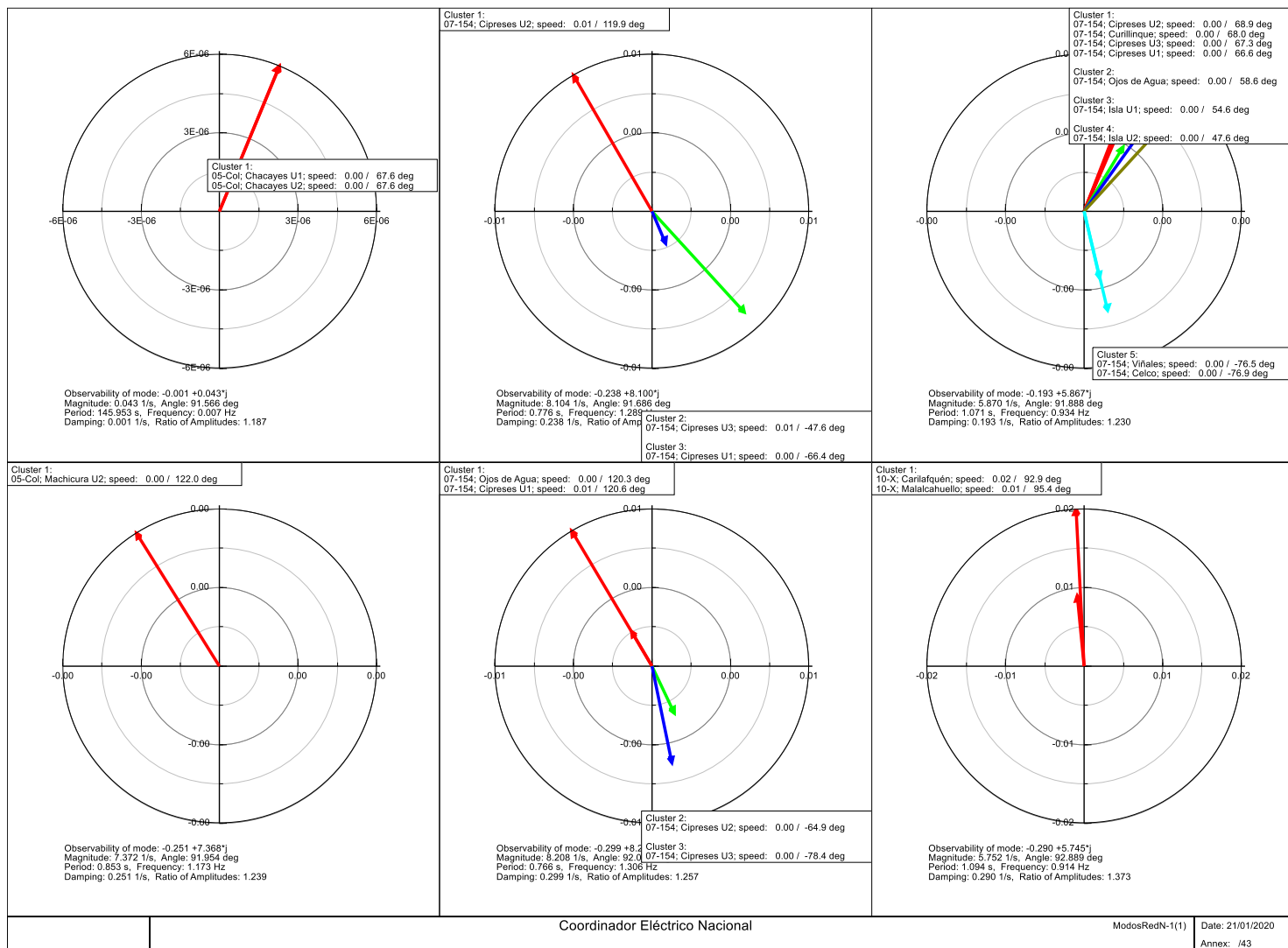




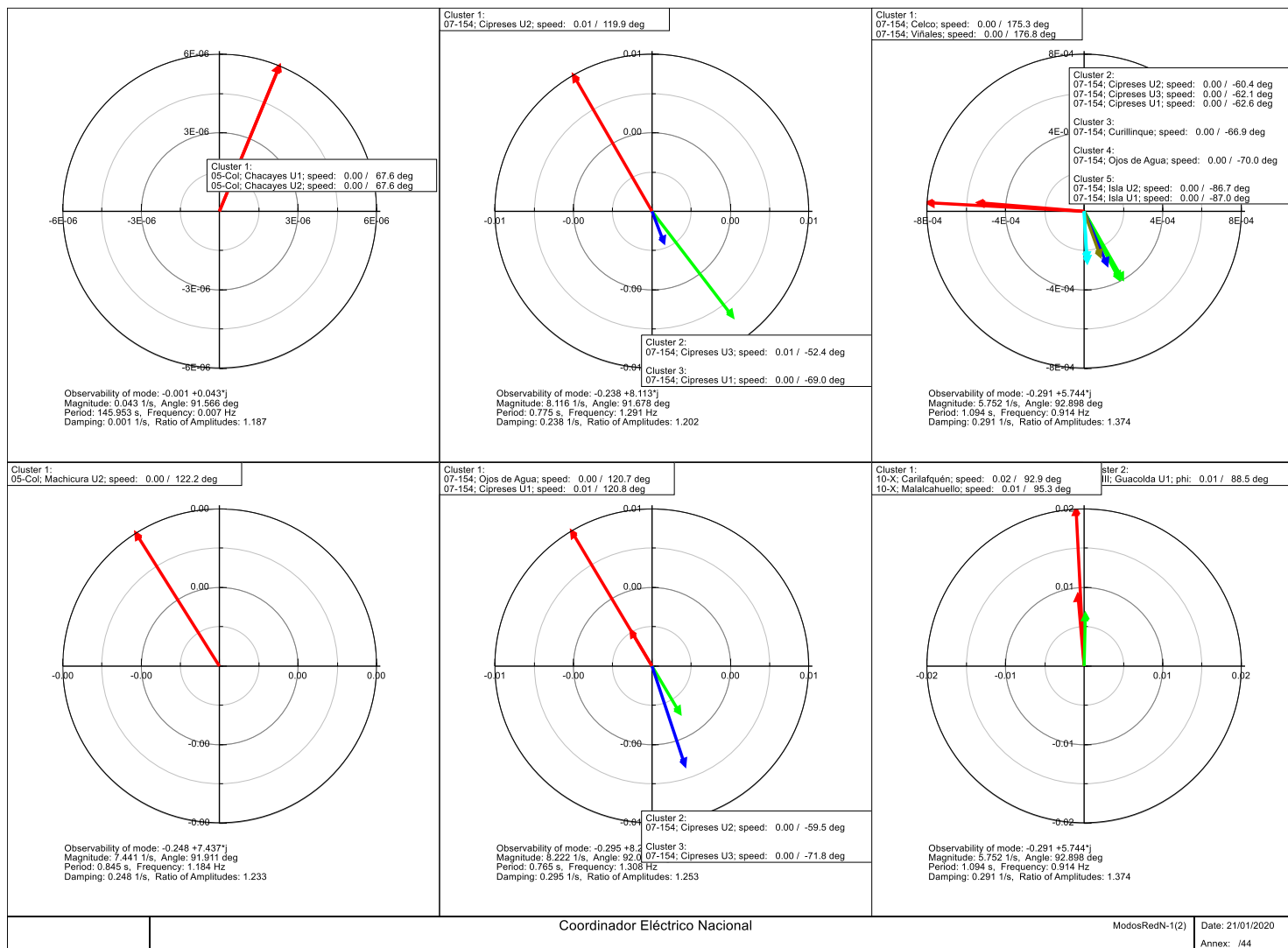




16.5.2 Red N-1 Caso 1.- Changos Cumbres 500 kV



16.5.3 Red N-1 Caso 2.- Nueva Pan de Azúcar - Polpaico 500 kV



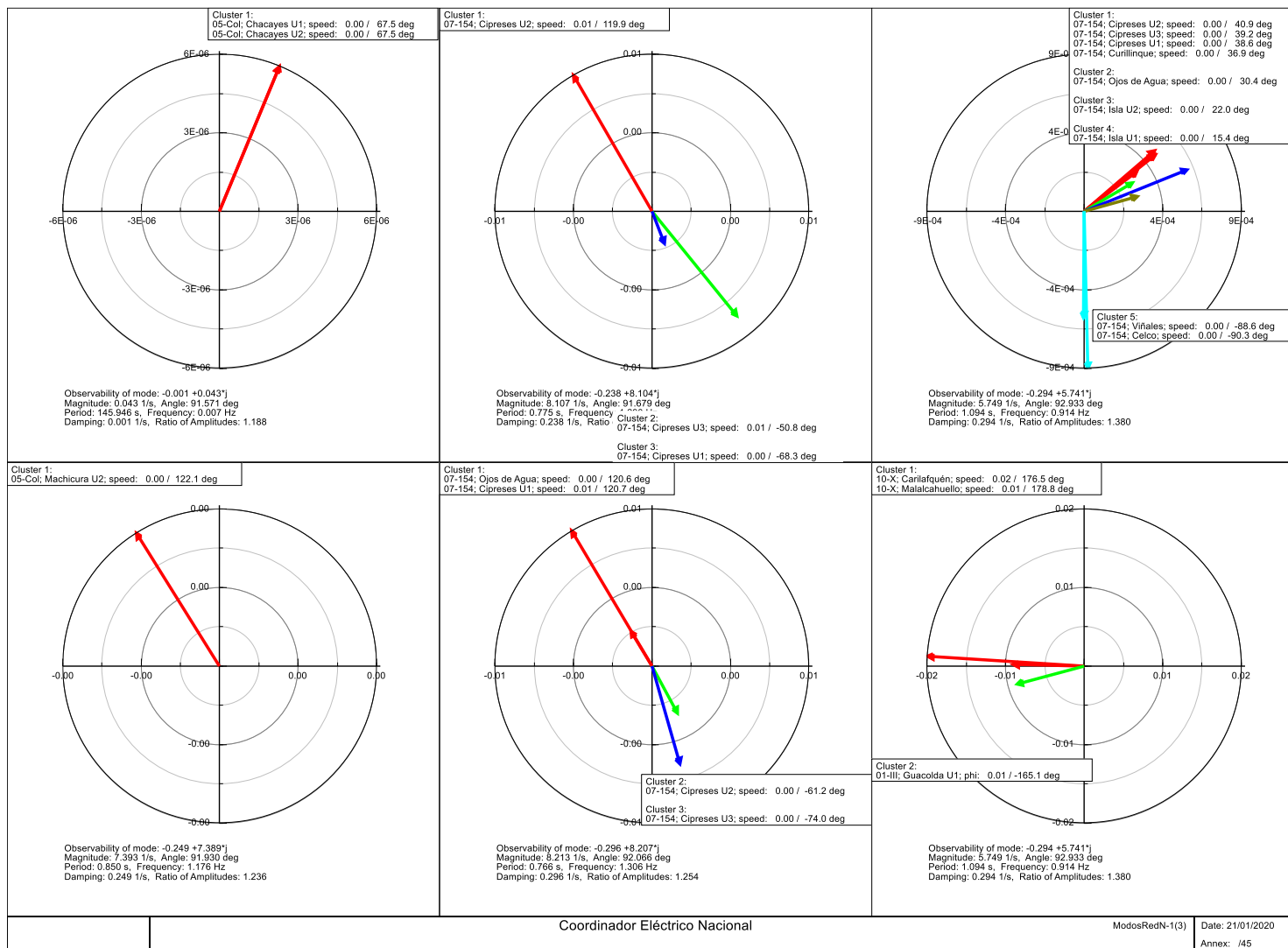
Coordinador Eléctrico Nacional

ModosRedN-1(2)

Date: 21/01/2020

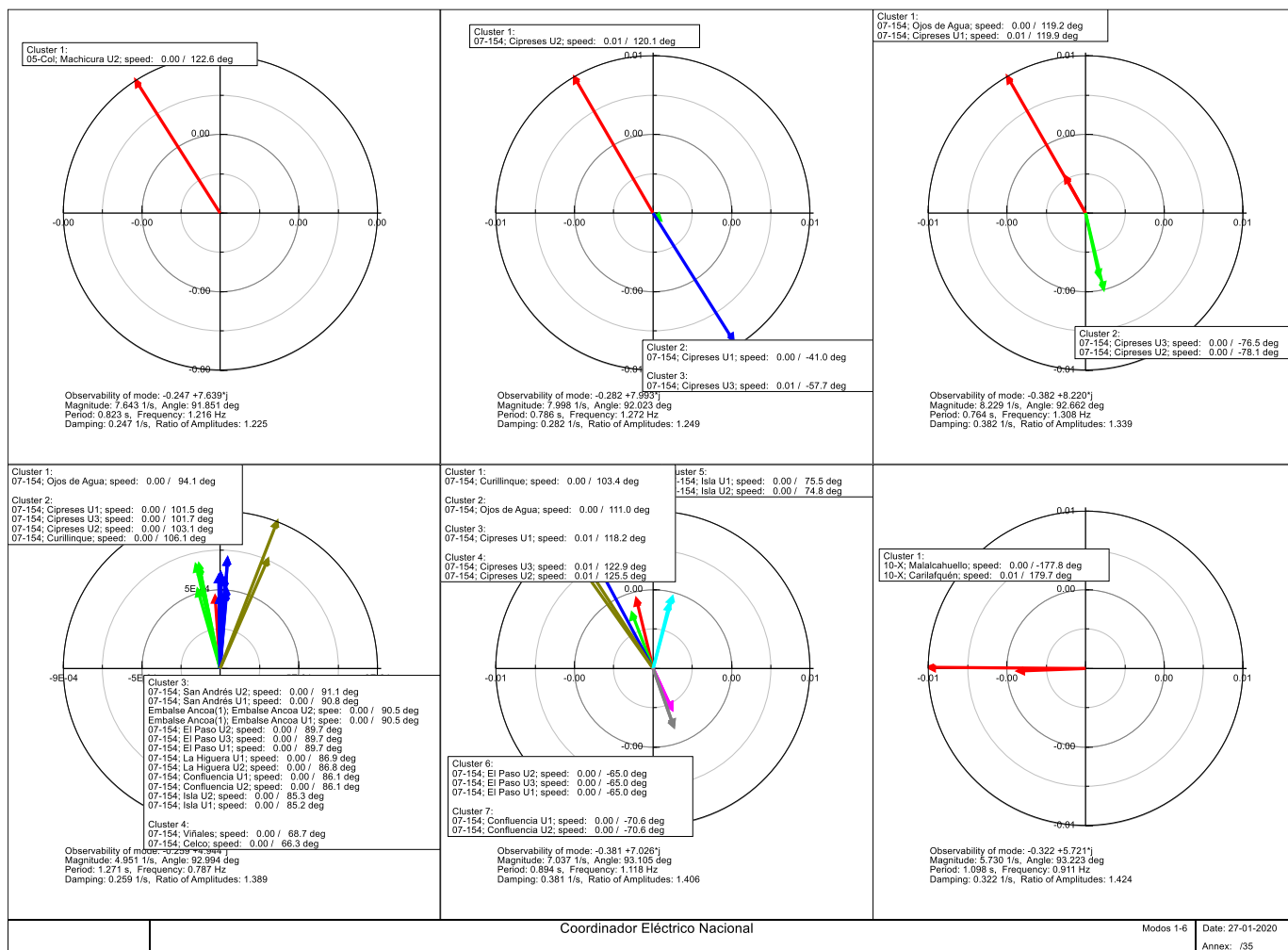
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16.5.4 Red N-1 Caso 3.- Charrúa - Ancoa 500 kV



16.6 Escenario E6 DB Sep2020

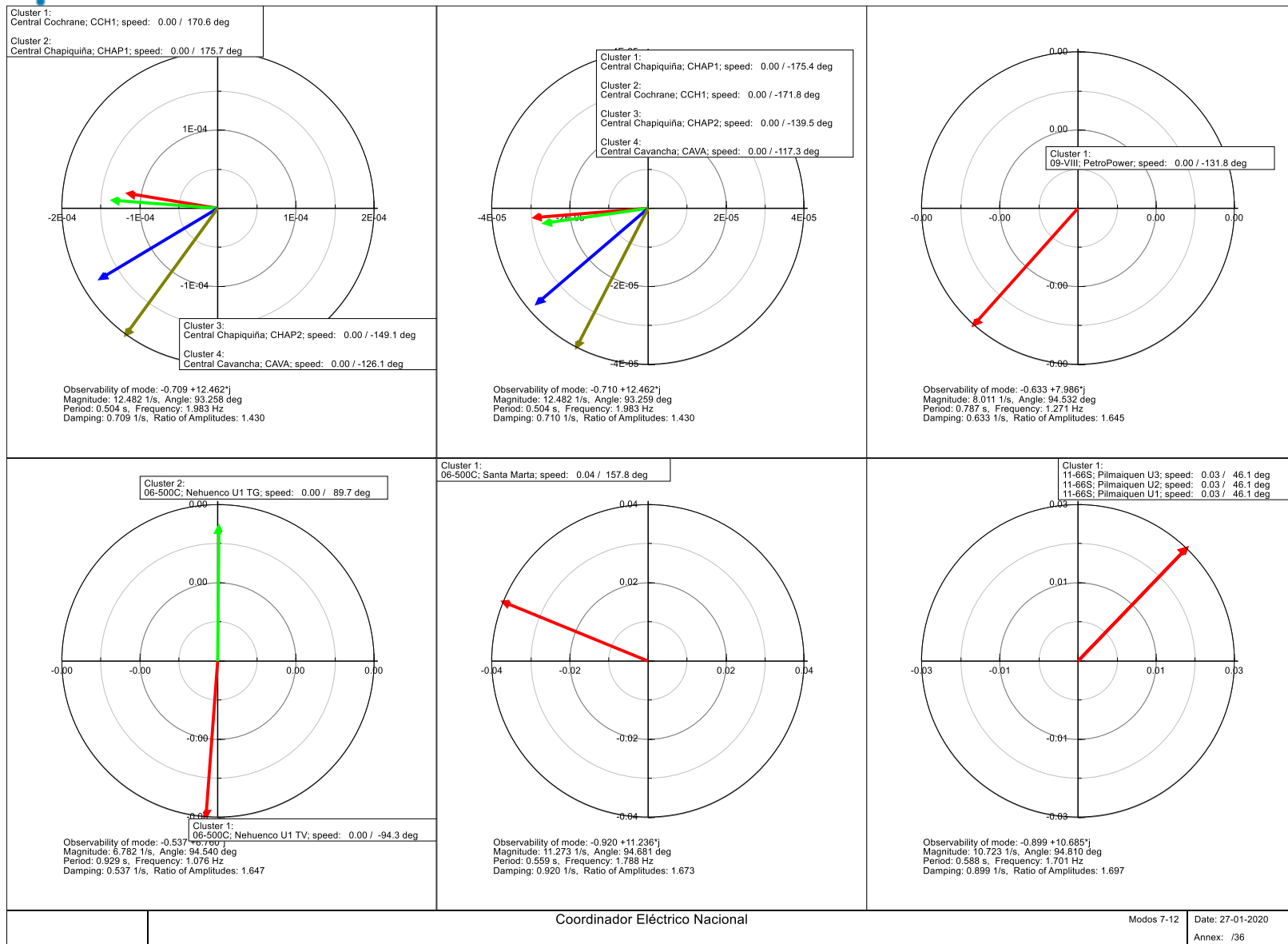
16.6.1 Red N

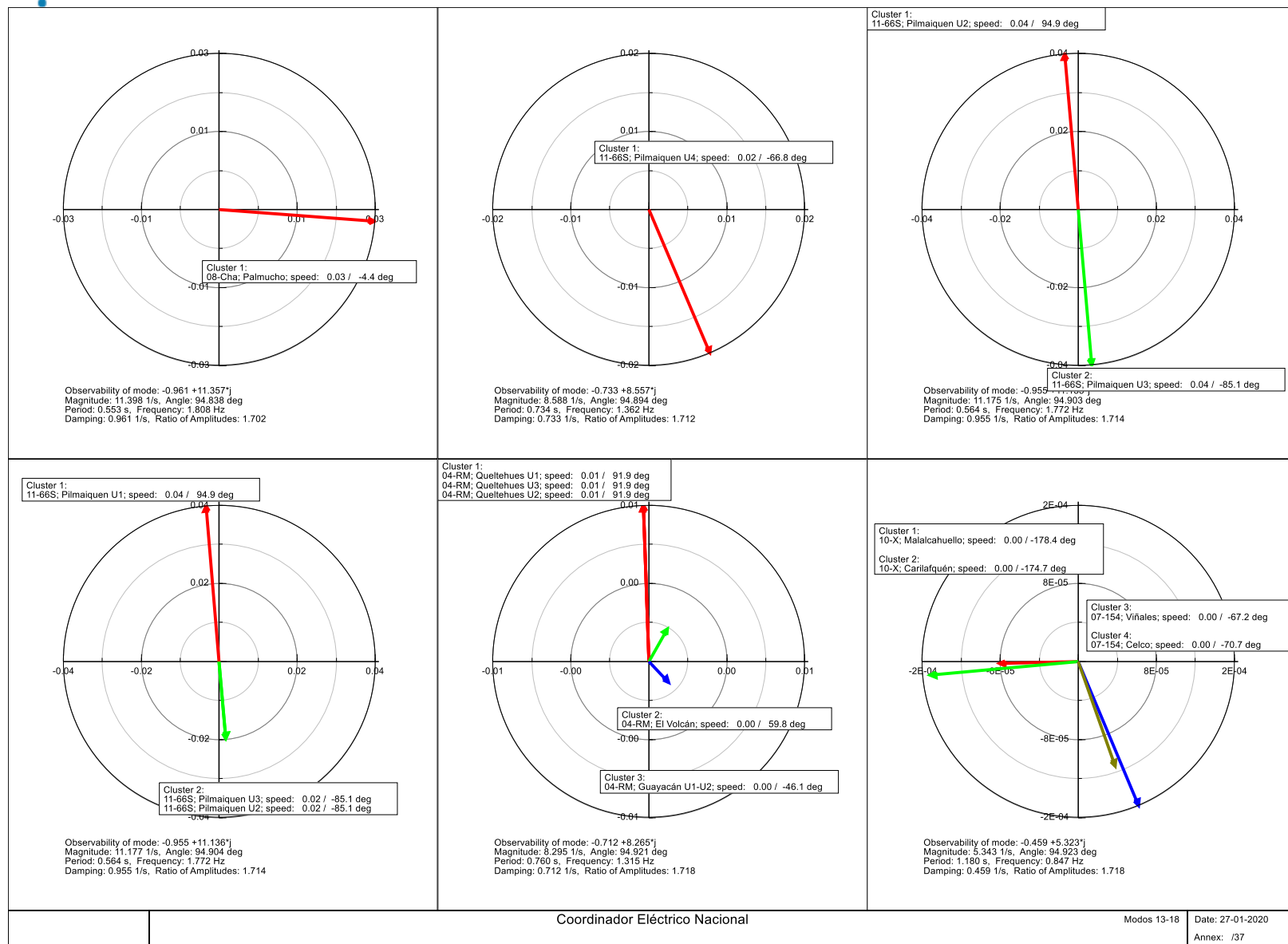


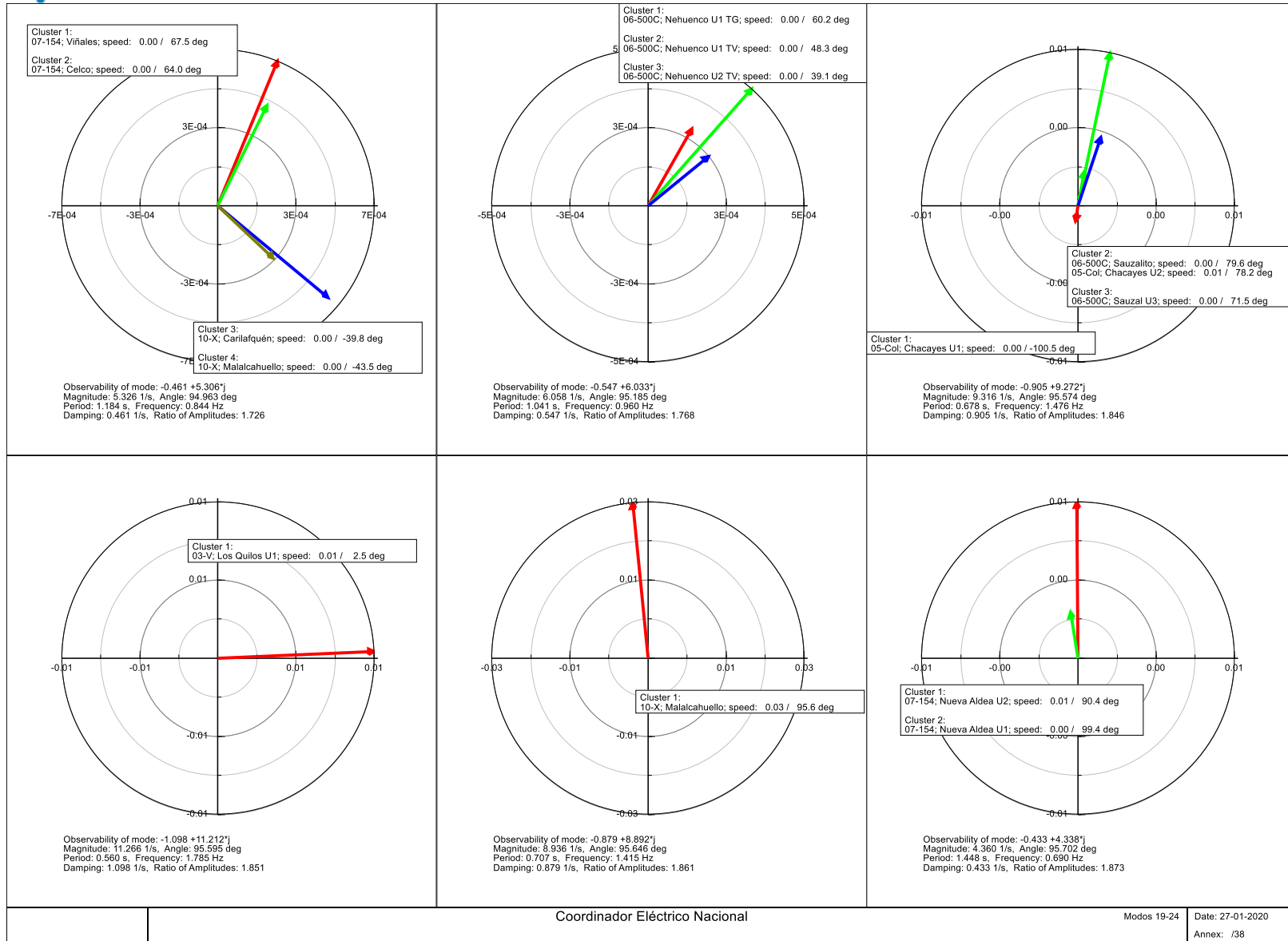
Coordinador Eléctrico Nacional

Modos 1-6 Date: 27-01-2020

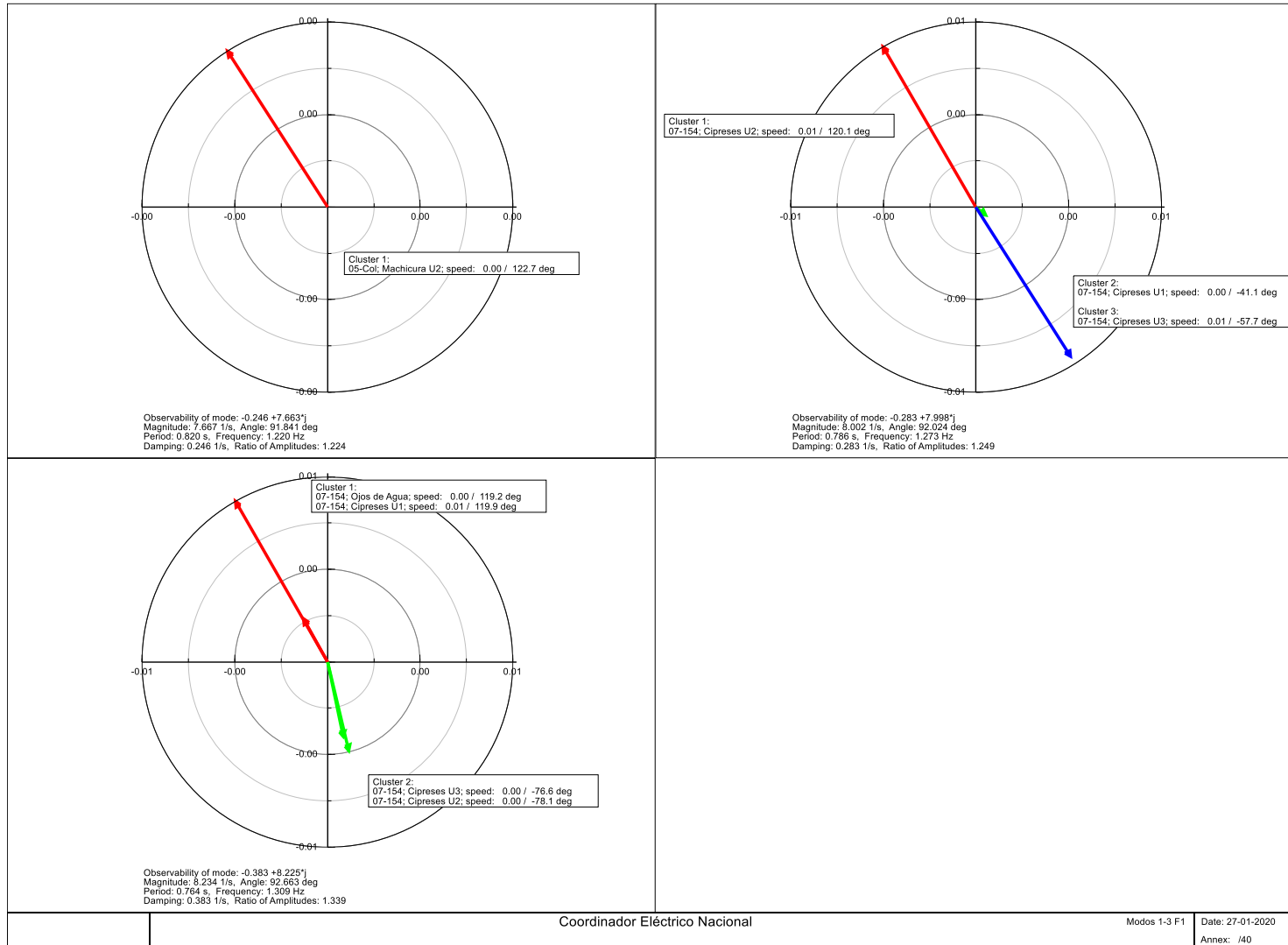
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16.6.2 Red N-1 Caso 1.- Changos Cumbres 500 kV



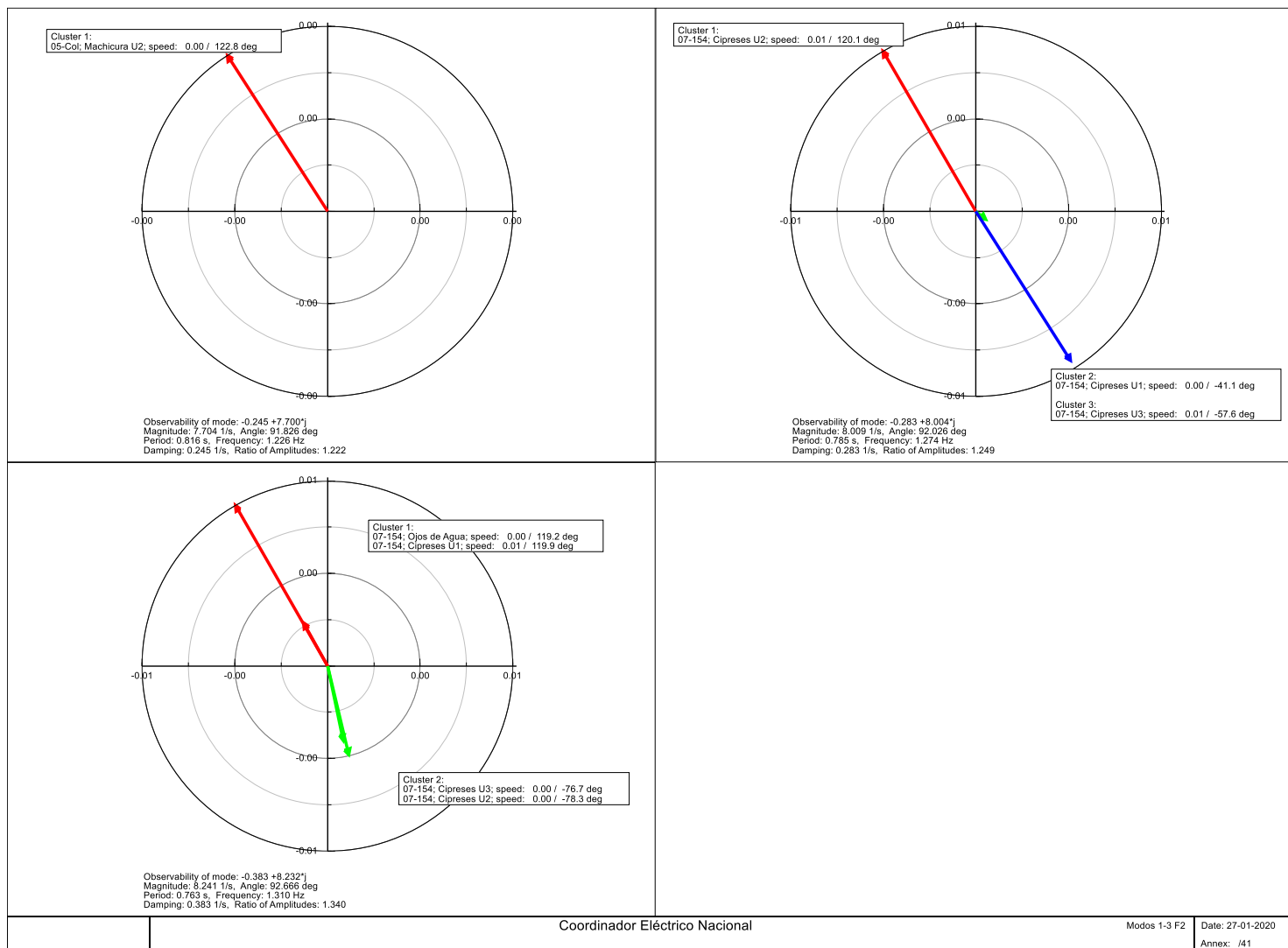
Coordinador Eléctrico Nacional

Modos 1-3 F1

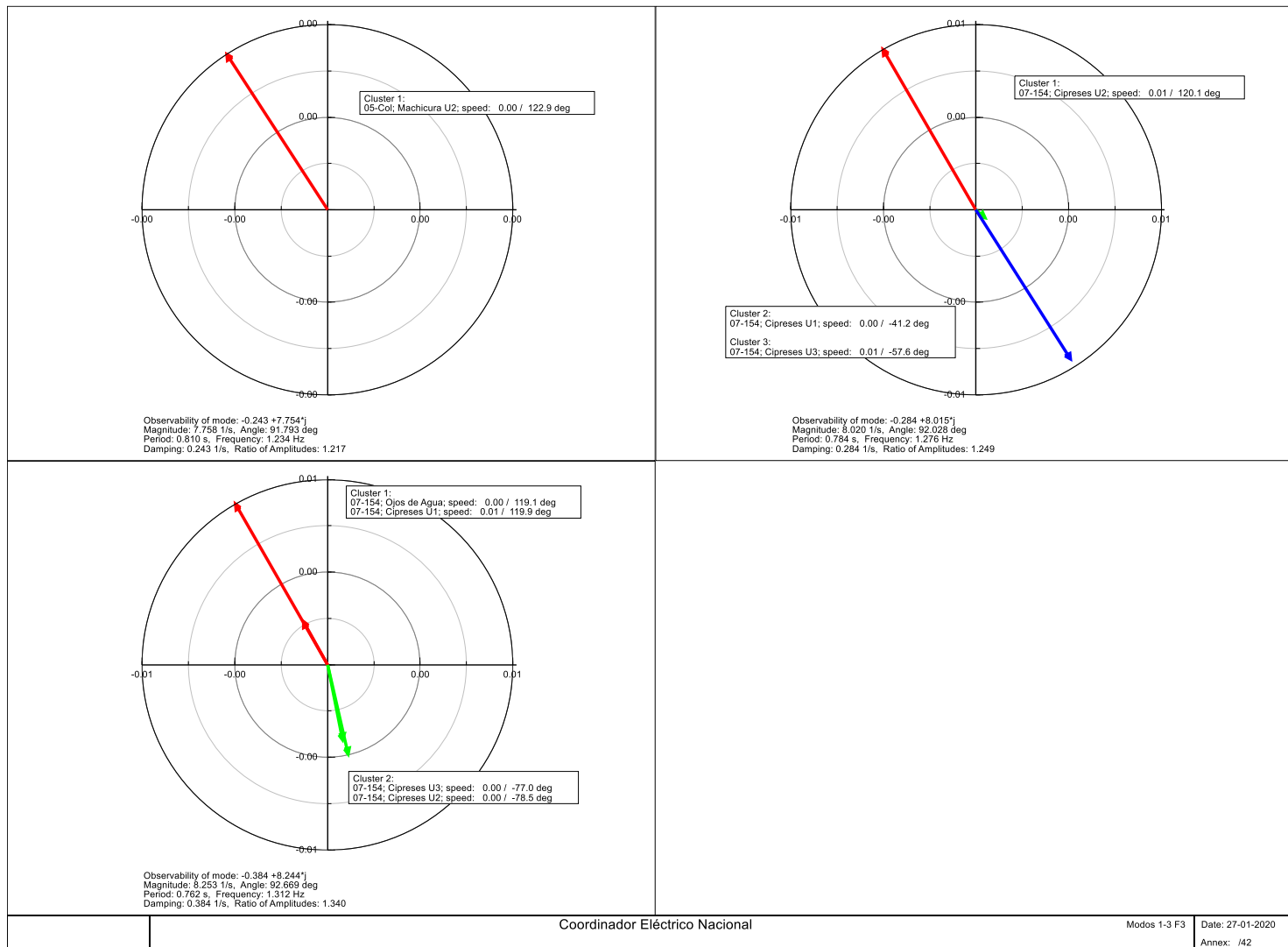
Date: 27-01-2020

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16.6.3 Red N-1 Caso 2.- Nueva Pan de Azúcar - Polpaico 500 kV

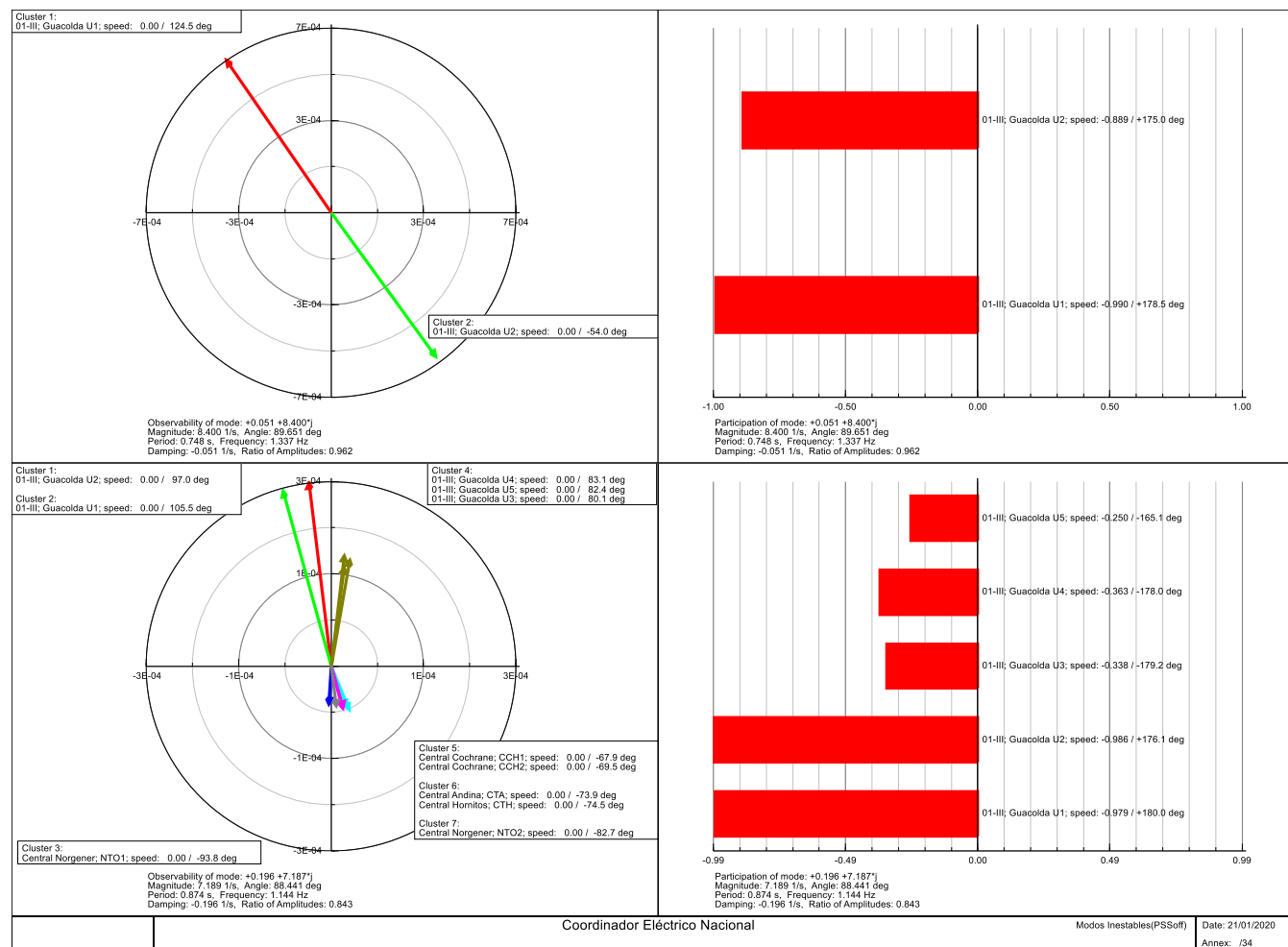


16.6.4 Red N-1 Caso 3.- Entre Ríos - Ancoa 500 kV

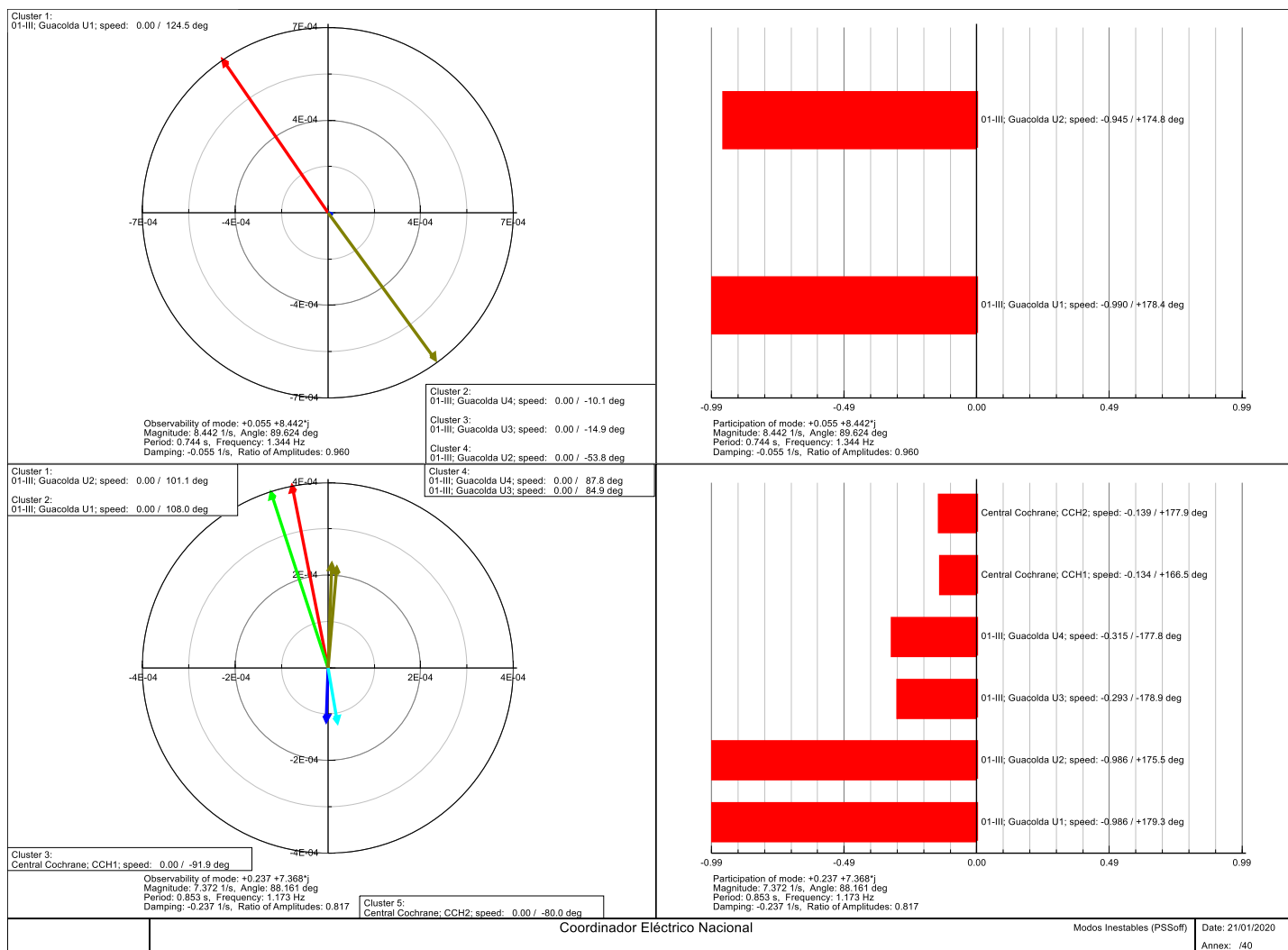


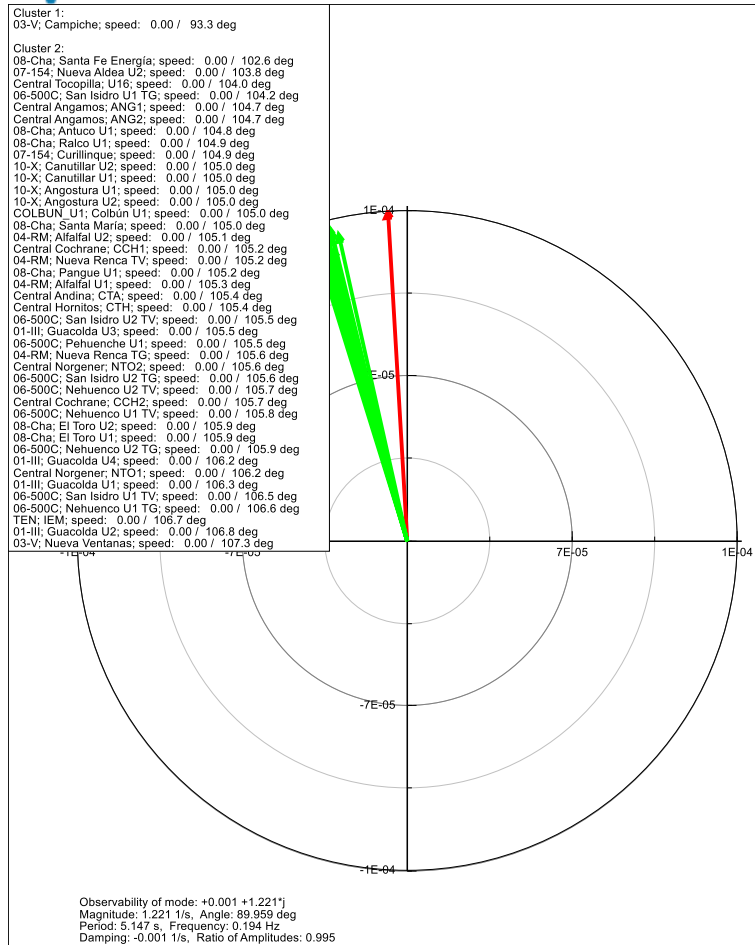
17 ANEXO 3: MODOS INESTABLES PSS F/S

17.1 Escenario E1 DA día Dic2020

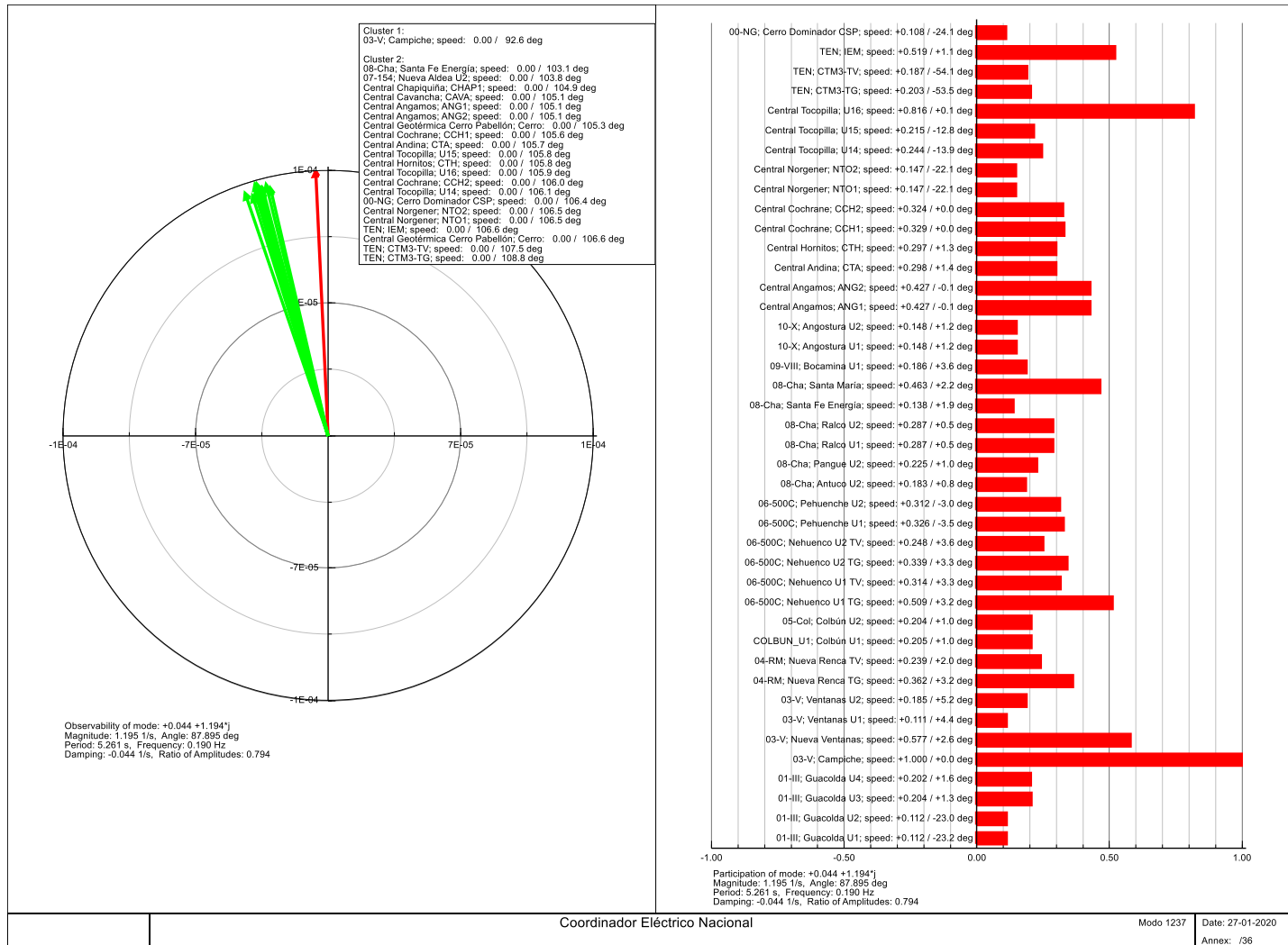


17.2 Escenario E2 DA día Abr2020

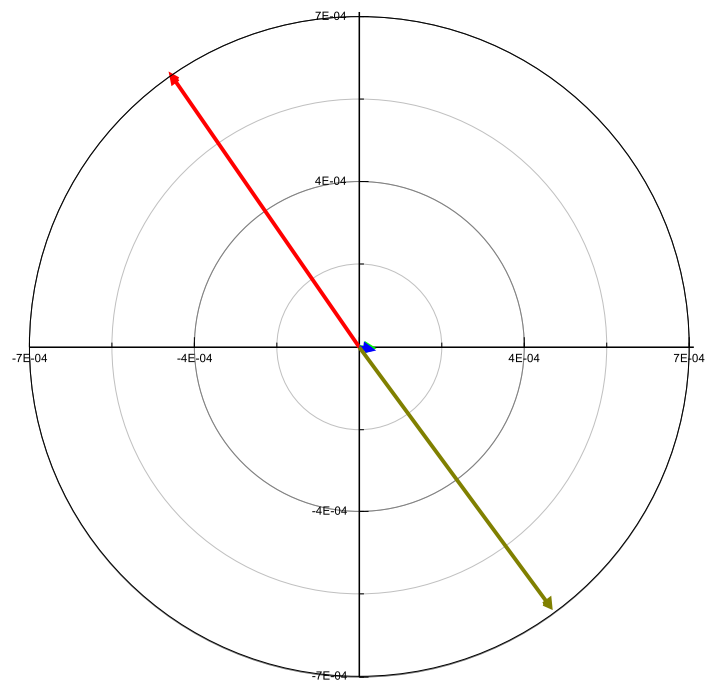




17.3 Escenario E3 DA noche Mar2020



Cluster 1:
01-III; Guacolda U1; speed: 0.00 / 124.7 deg



Observability of mode: $+0.038 + 8.422j$
Magnitude: 8.422 1/s, Angle: 89.743 deg
Period: 0.746 s, Frequency: 1.340 Hz
Damping: -0.038 1/s, Ratio of Amplitudes: 0.972

Cluster 2:
01-III; Guacolda U4; speed: 0.00 / -6.1 deg

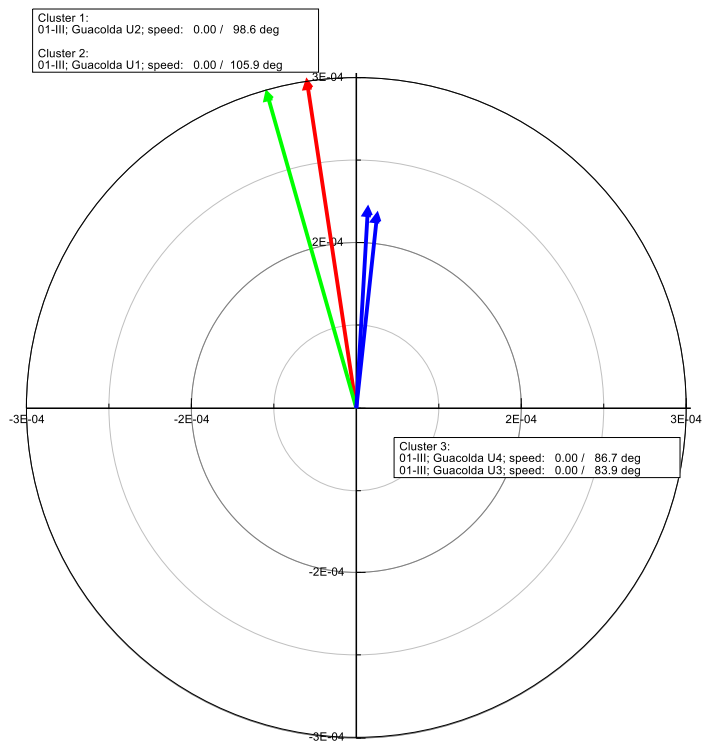
Cluster 3:
01-III; Guacolda U3; speed: 0.00 / -11.4 deg

Cluster 4:
01-III; Guacolda U2; speed: 0.00 / -53.7 deg

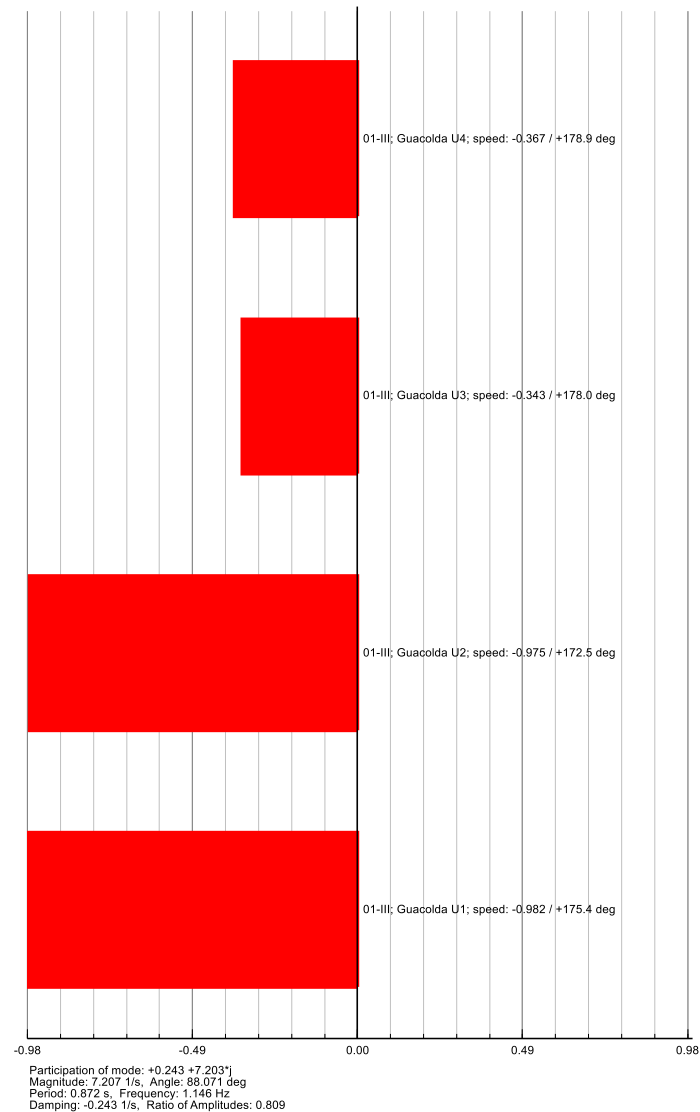
01-III; Guacolda U2; speed: -0.935 / +175.6 deg

01-III; Guacolda U1; speed: -0.990 / +178.7 deg

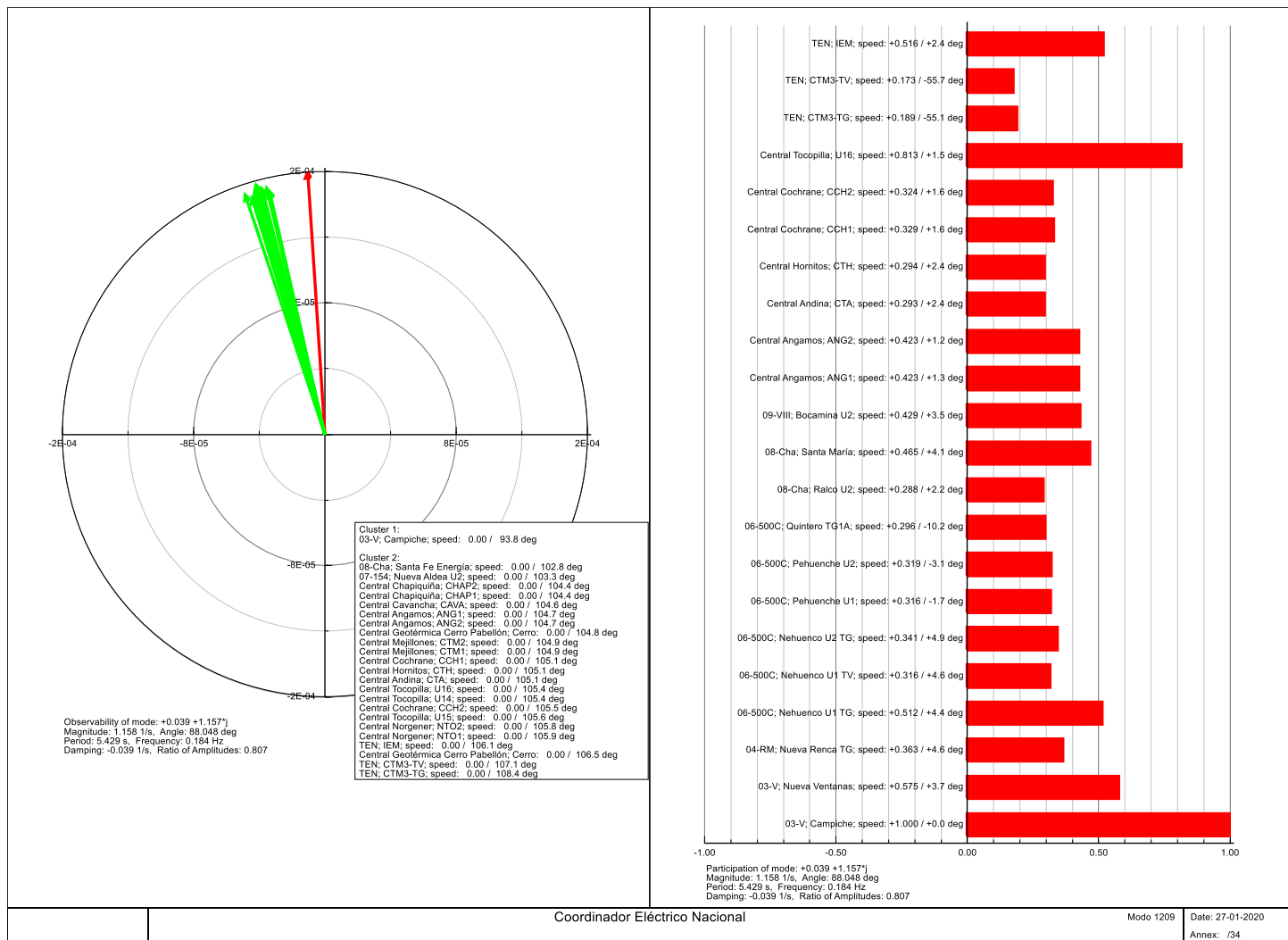
Participation of mode: $+0.038 + 8.422j$
Magnitude: 8.422 1/s, Angle: 89.743 deg
Period: 0.746 s, Frequency: 1.340 Hz
Damping: -0.038 1/s, Ratio of Amplitudes: 0.972

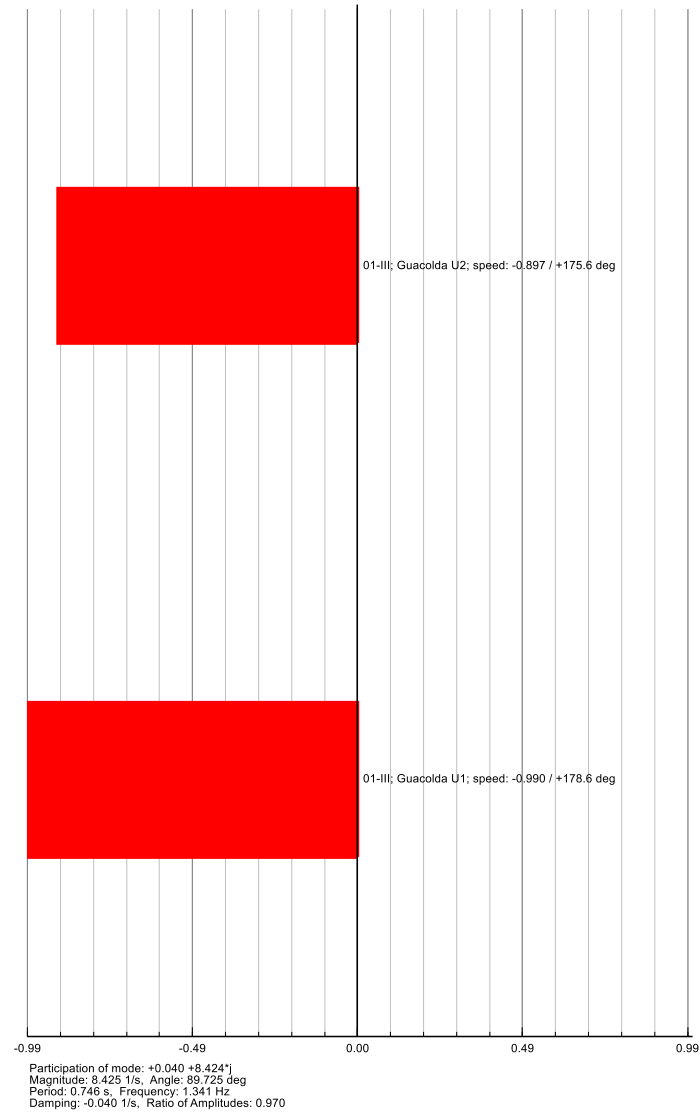
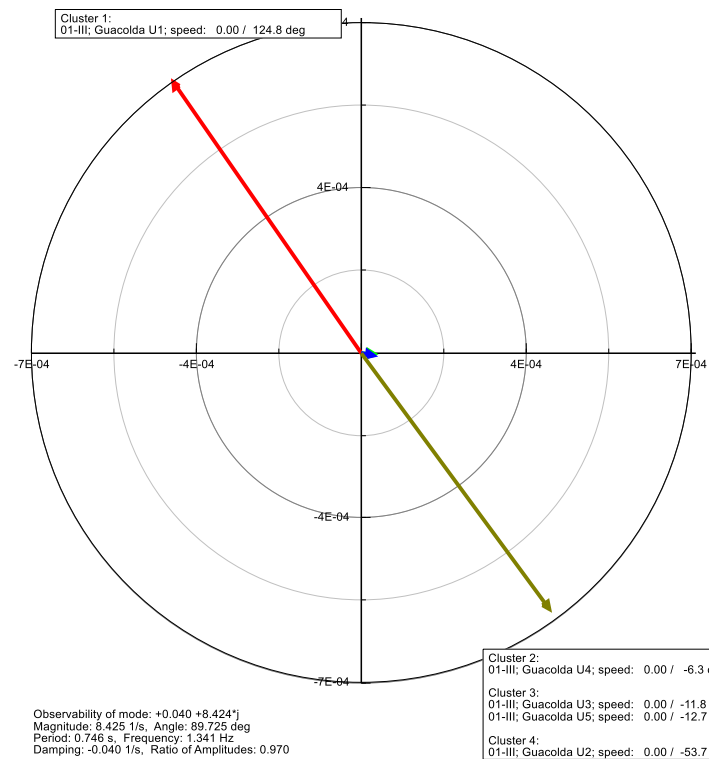


Observability of mode: $+0.243 + 7.203j$
 Magnitude: 7.207 1/s, Angle: 88.071 deg
 Period: 0.872 s, Frequency: 1.146 Hz
 Damping: -0.243 1/s, Ratio of Amplitudes: 0.809

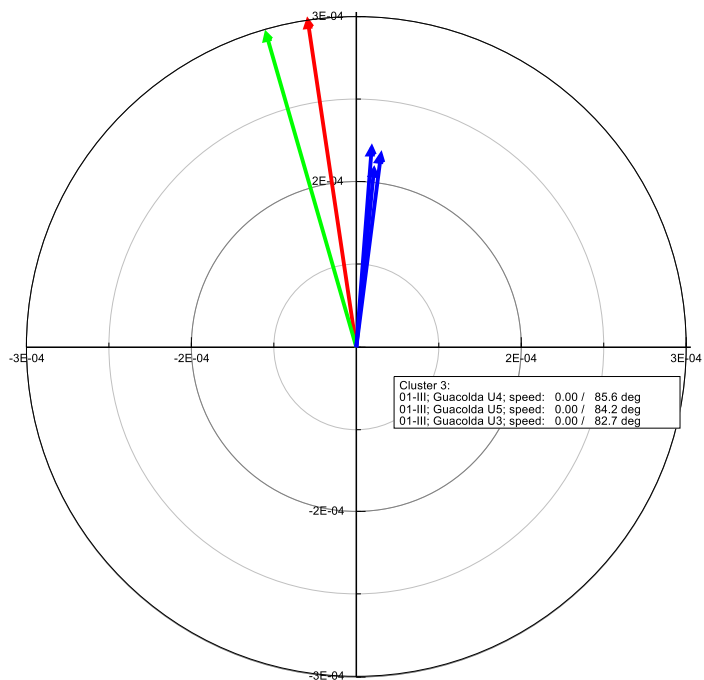


17.4 Escenario E4 DA noche Jun2020



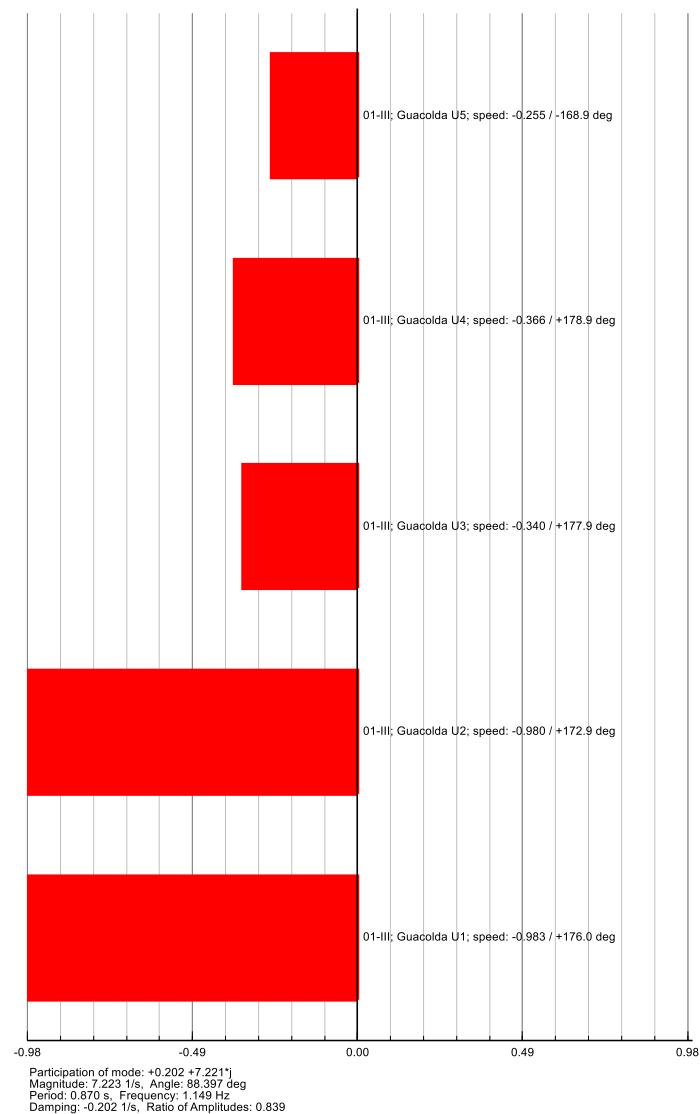


Cluster 1:
01-III; Guacolda U2; speed: 0.00 / 98.4 deg
Cluster 2:
01-III; Guacolda U1; speed: 0.00 / 106.0 deg

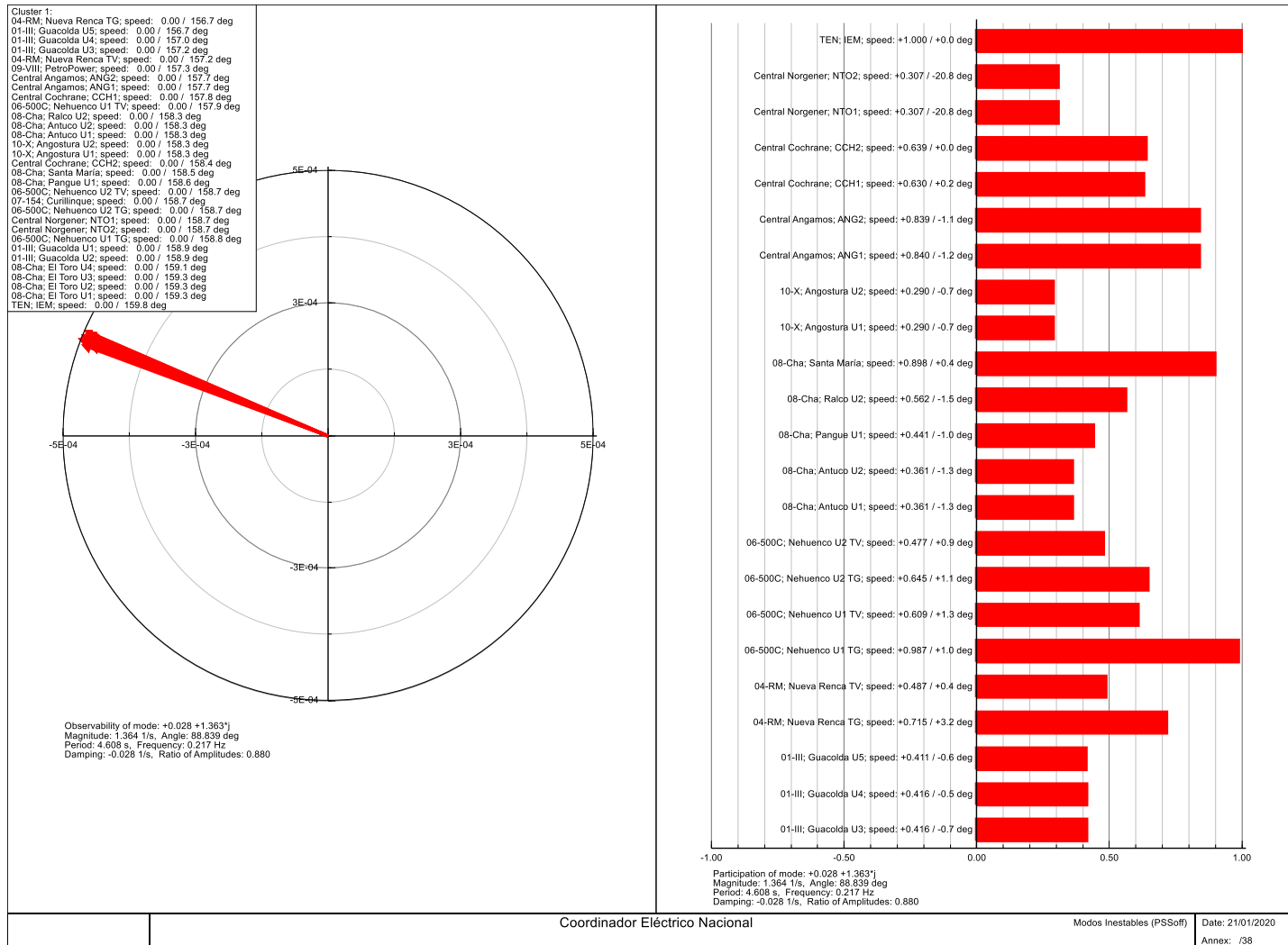


Observability of mode: $+0.202 + 7.221j$
Magnitude: 7.223 1/s, Angle: 88.397 deg
Period: 0.870 s, Frequency: 1.149 Hz
Damping: -0.202 1/s, Ratio of Amplitudes: 0.839

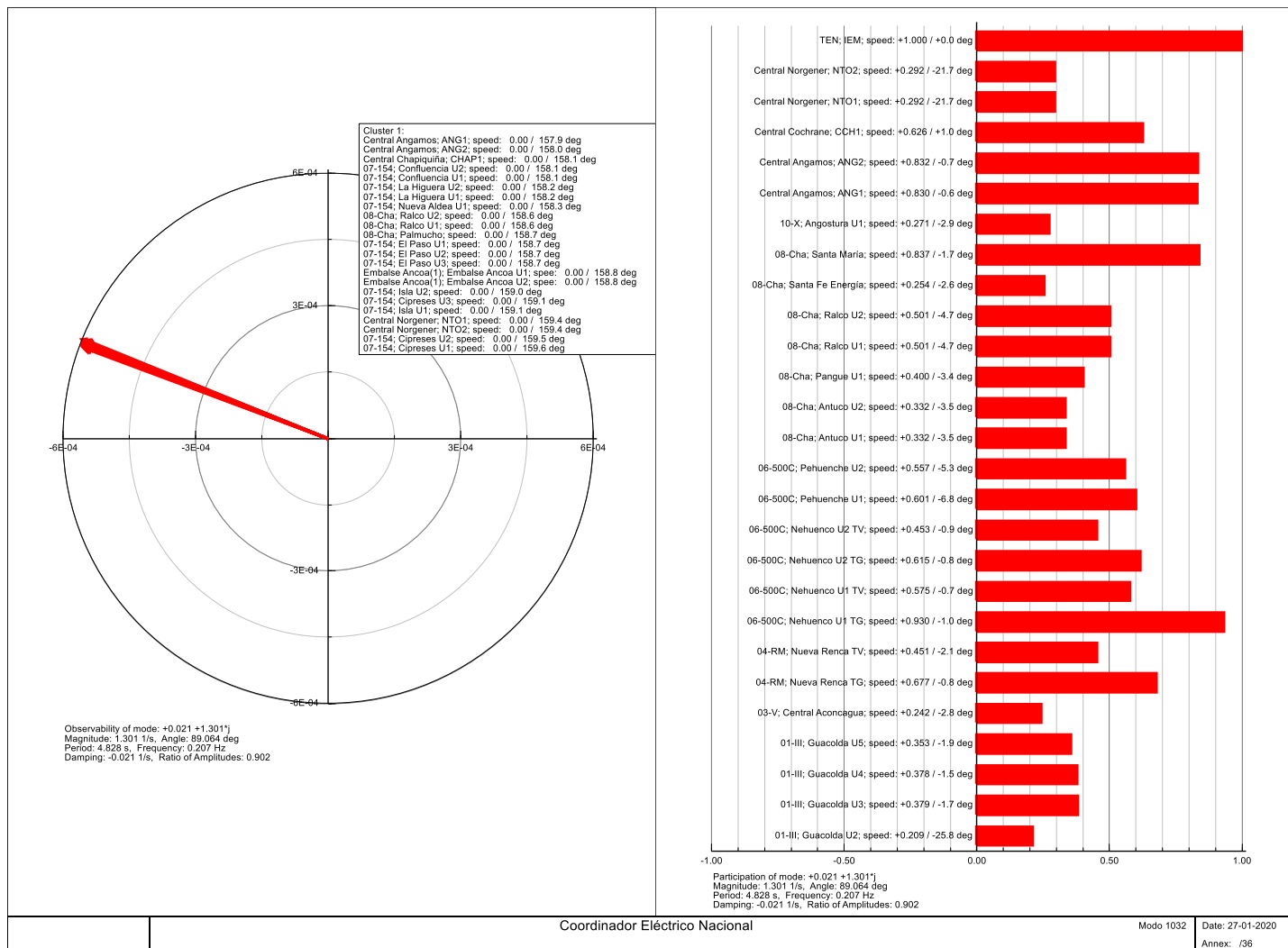
Cluster 3:
01-III; Guacolda U4; speed: 0.00 / 85.6 deg
01-III; Guacolda U5; speed: 0.00 / 84.2 deg
01-III; Guacolda U3; speed: 0.00 / 82.7 deg

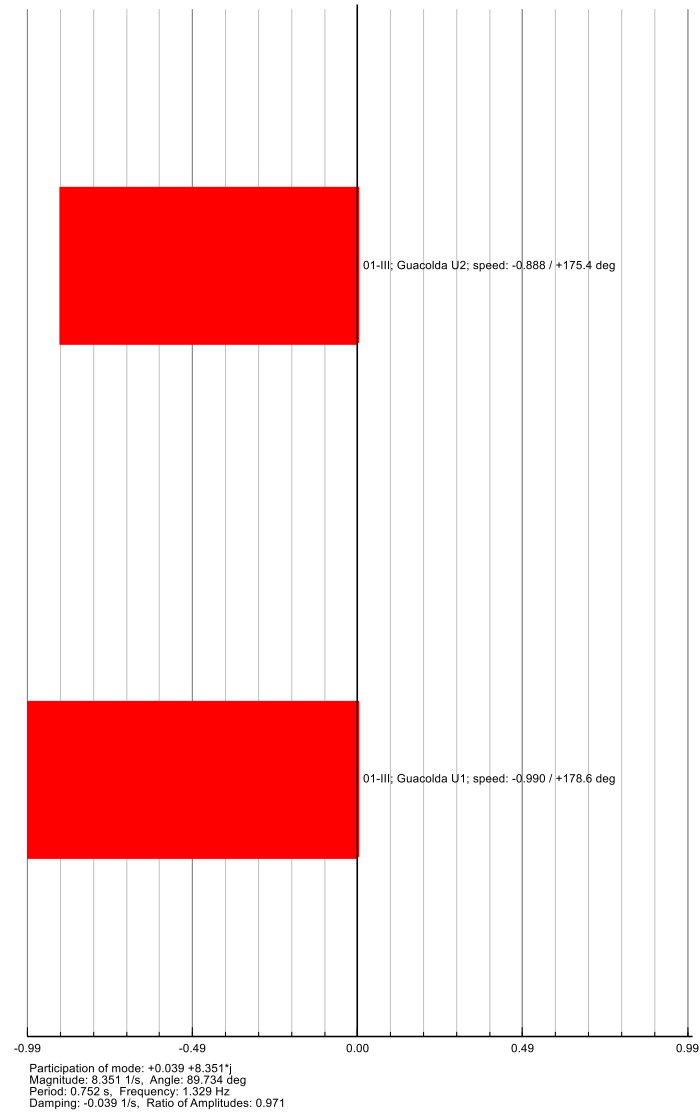
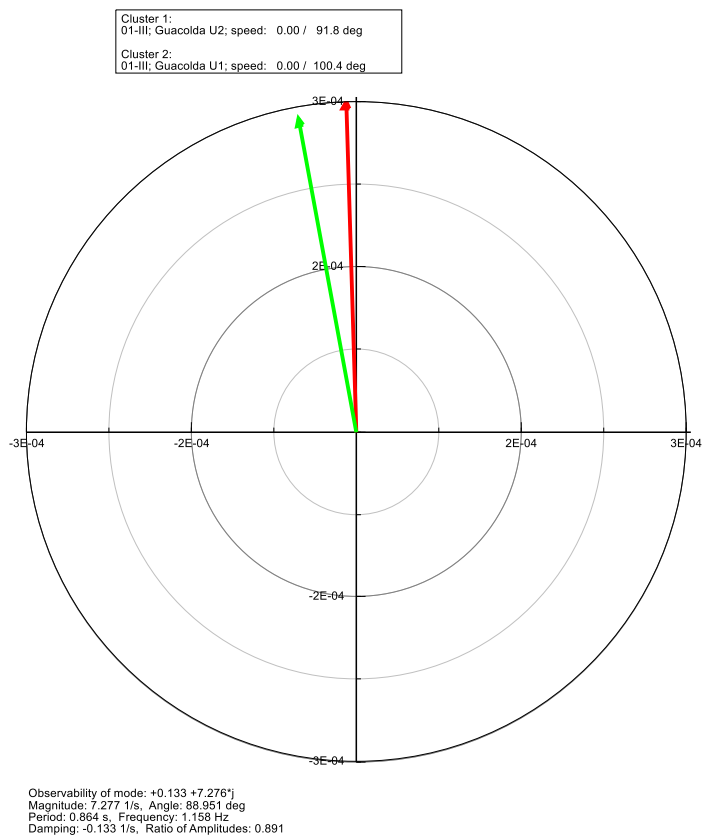


17.5 Escenario E5 DB día Ene2021

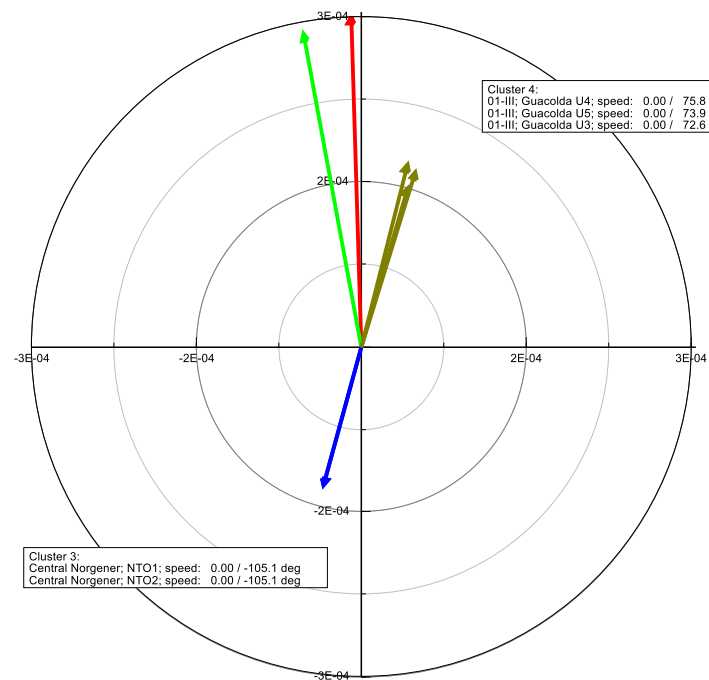


17.6 Escenario E6 DB Sep2020





Cluster 1:
01-III; Guacolda U2; speed: 0.00 / 91.8 deg
Cluster 2:
01-III; Guacolda U1; speed: 0.00 / 100.4 deg



Cluster 3:
Central Norgener; NTO1; speed: 0.00 / -105.1 deg
Central Norgener; NTO2; speed: 0.00 / -105.1 deg

Observability of mode: $+0.133 + 7.276j$
Magnitude: 7.277 1/s, Angle: 88.951 deg
Period: 0.864 s, Frequency: 1.158 Hz
Damping: -0.133 1/s, Ratio of Amplitudes: 0.891

Cluster 4:
01-III; Guacolda U4; speed: 0.00 / 75.8 deg
01-III; Guacolda U5; speed: 0.00 / 73.9 deg
01-III; Guacolda U3; speed: 0.00 / 72.6 deg

