



**INCORPORACIÓN RECURSO SOLAR
EN DIFERENTES ESCALAS AL SIN
ANEXO 1.2**

**Evento de Pérdida de Generación de
348 MW de Tebsa**

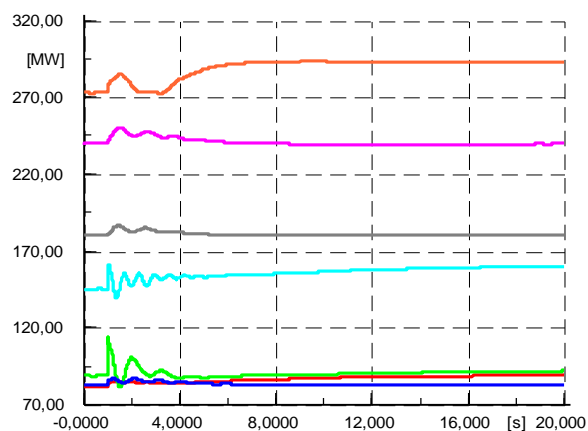
Orden de las gráficas

Gráfica	Variable de Control	Descripción
A21_Potencia Pg	P [MW]	Potencia activa generada por principales máquinas del SIN
A22_Potencia Qg	Q [MVar]	Potencia reactiva generada por principales máquinas del SIN
A23_Tensiones SIN	V [p.u.]	Tensiones de subestaciones del SIN
A24_Ángulos SIN	σ	Ángulos de subestaciones del SIN
A25_Potencia Pl	P [MW]	Potencia activa a través de líneas de transmisión
A26_Potencia Ql	Q [MVar]	Potencia reactiva a través de líneas de transmisión
A27_Frecuencia SIN	Hz	Frecuencia del Sistema

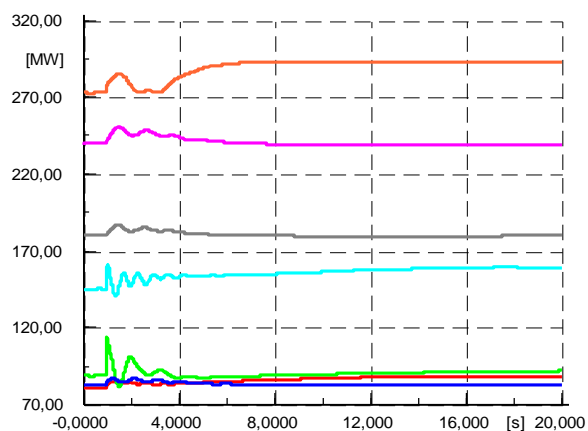
Estructuración de las simulaciones



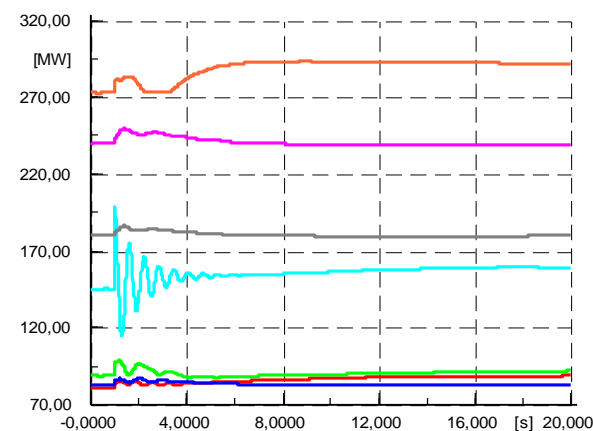
- 1: Red Sin Proyecto (RSP) – Despacho Hidráulico (DH) – Falla en Tebsa
- 2: Red Con Proyecto (RCP) – Despacho Hidráulico (DH) – Falla en Tebsa
- 3: Red Con Proyecto (RCP) – Despacho Hidráulico (DH) – Falla en Sistema PV
- 4: Red Sin Proyecto (RSP) – Despacho Térmico (DT) – Falla en Tebsa
- 5: Red Con Proyecto (RCP) – Despacho Térmico (DT) – Falla en Tebsa
- 6: Red Con Proyecto (RCP) – Despacho Térmico (DT) – Falla en Sistema PV



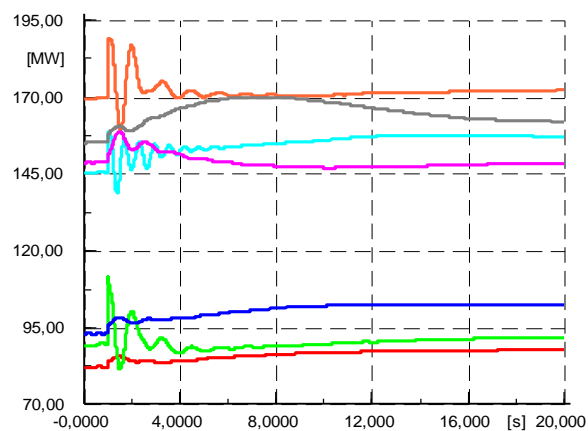
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Tebsa Gas 3: Active Power
Urra 1: Active Power
Guajira 2: Active Power
Sogamoso 1: Active Power
Guavio 1: Active Power
Betania 1: Active Power



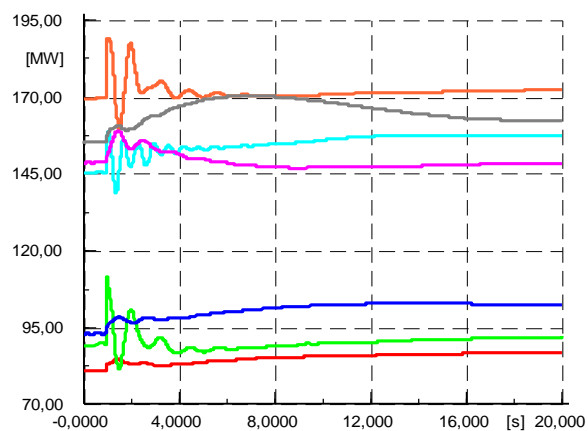
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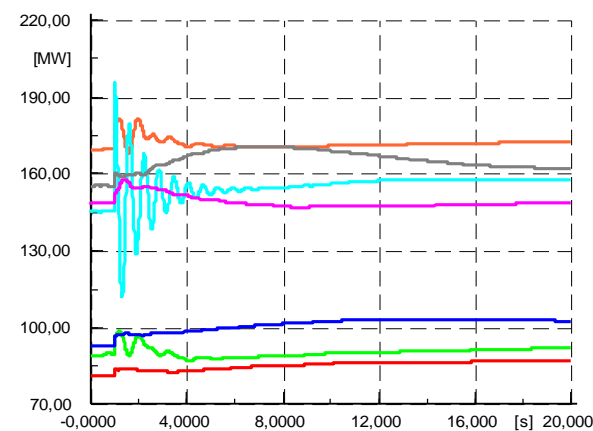
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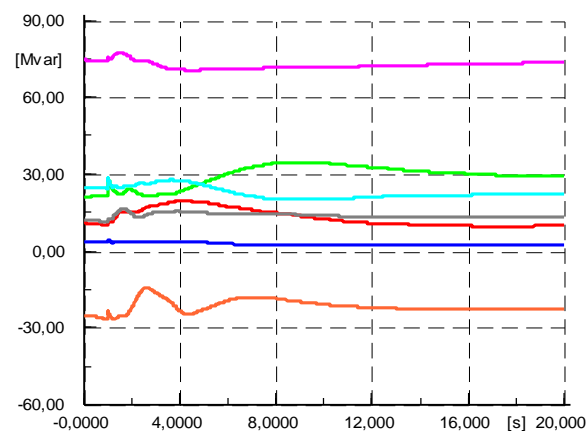
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Tasajero: Active Power



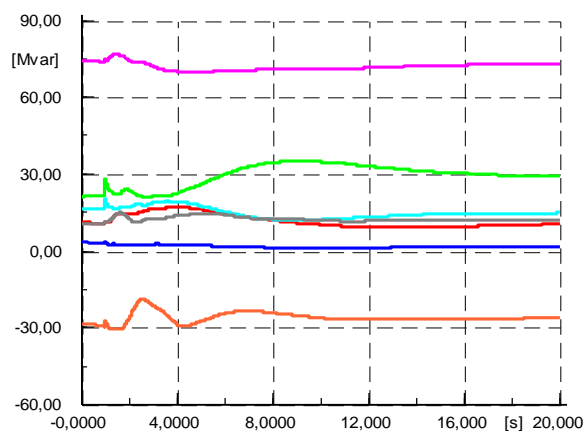
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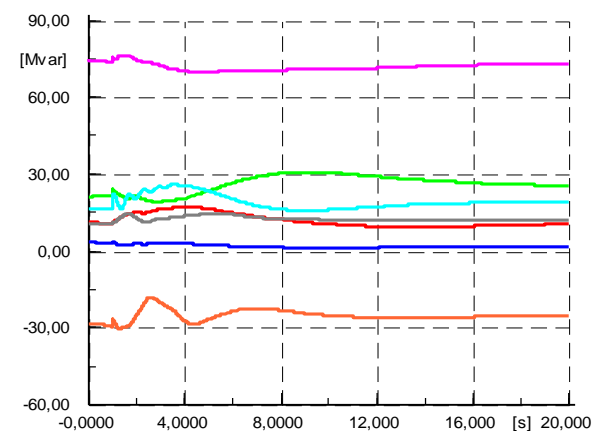
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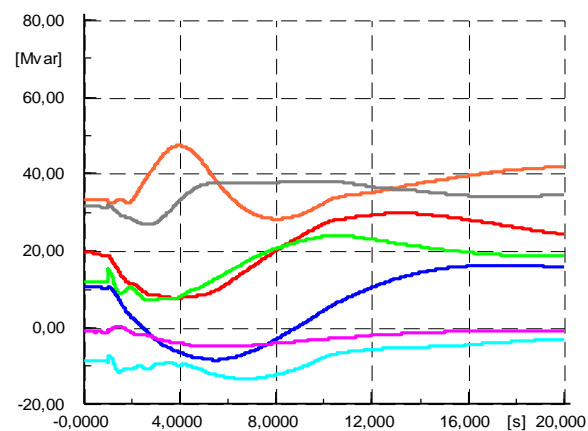
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Guavio 1: Reactive Power
Betania 1: Reactive Power



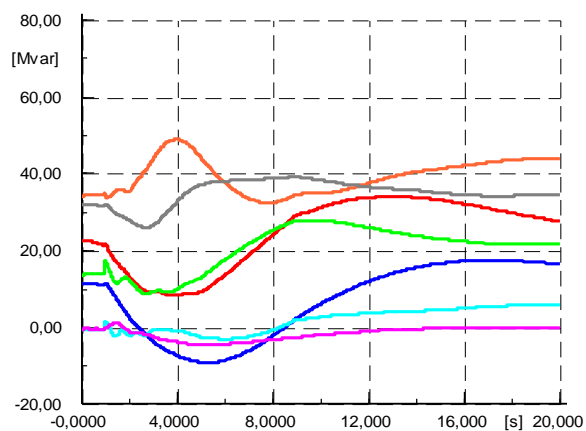
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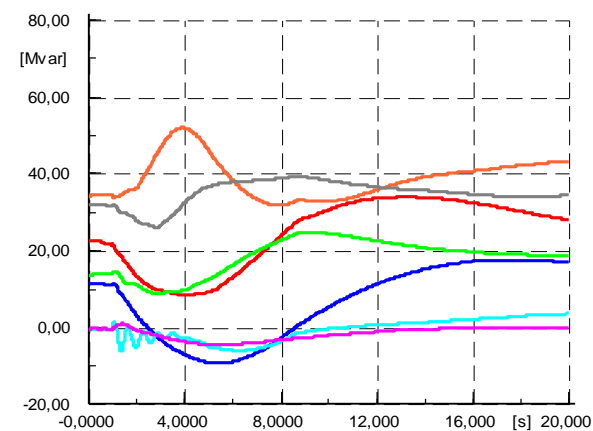
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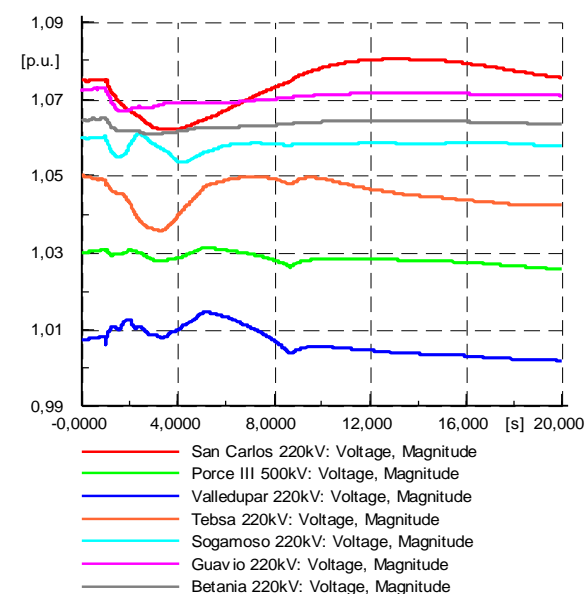
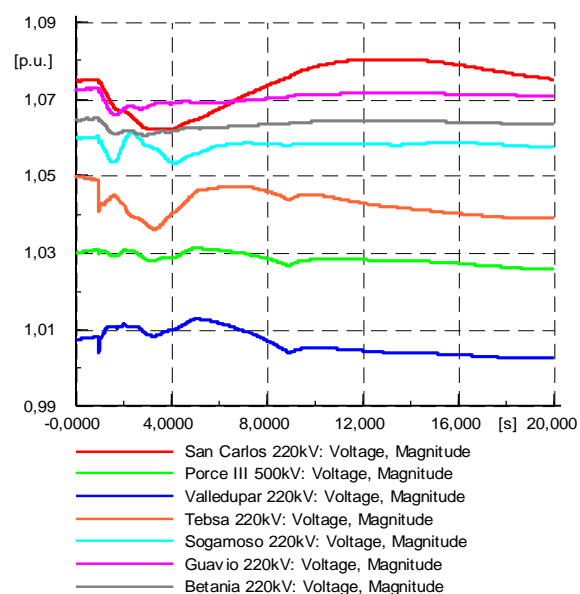
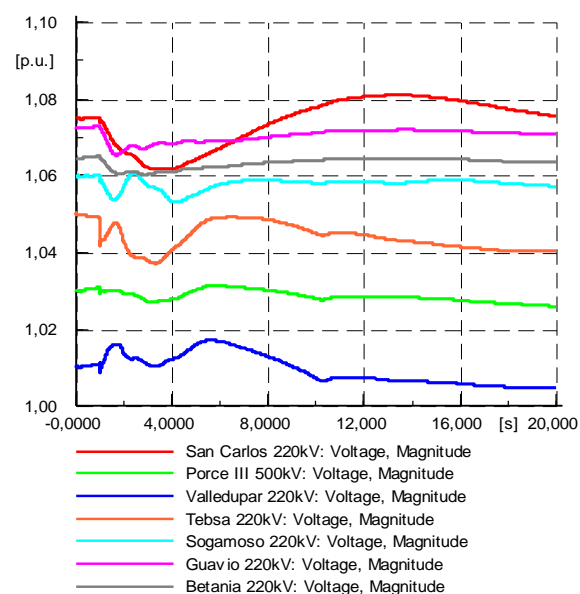
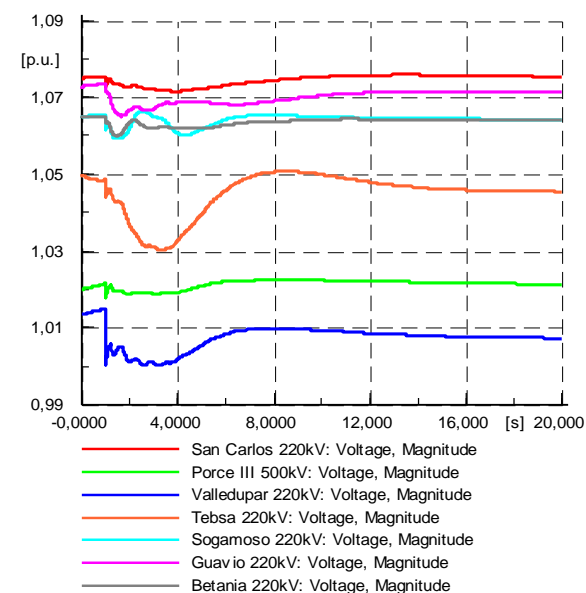
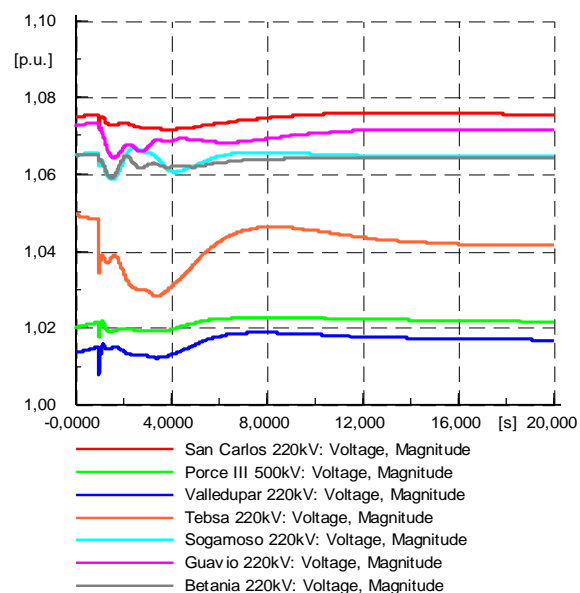
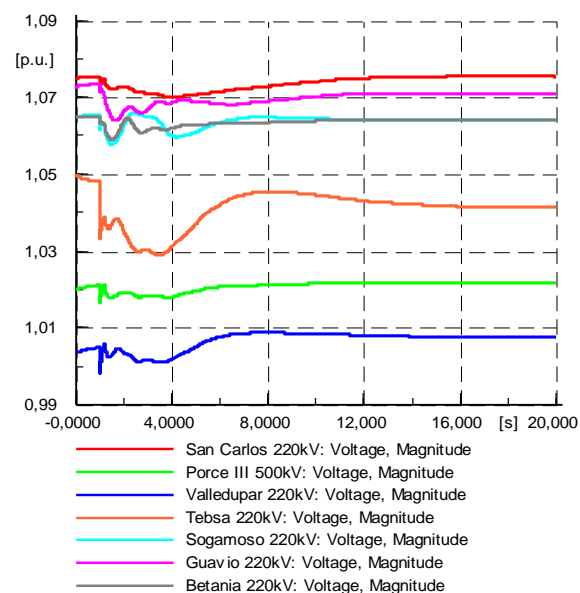
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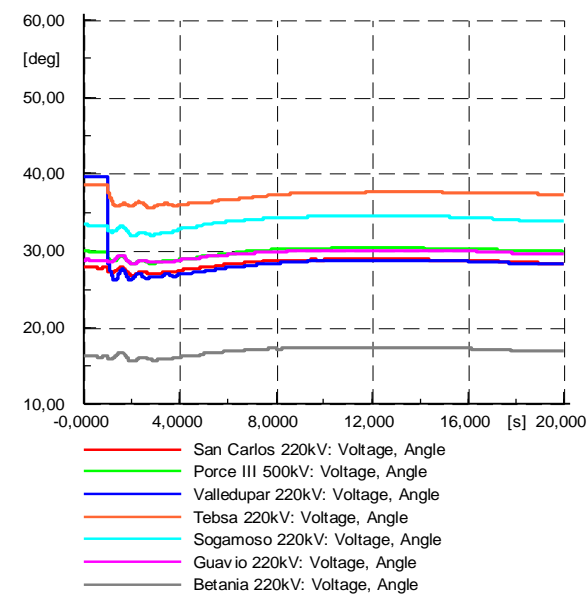
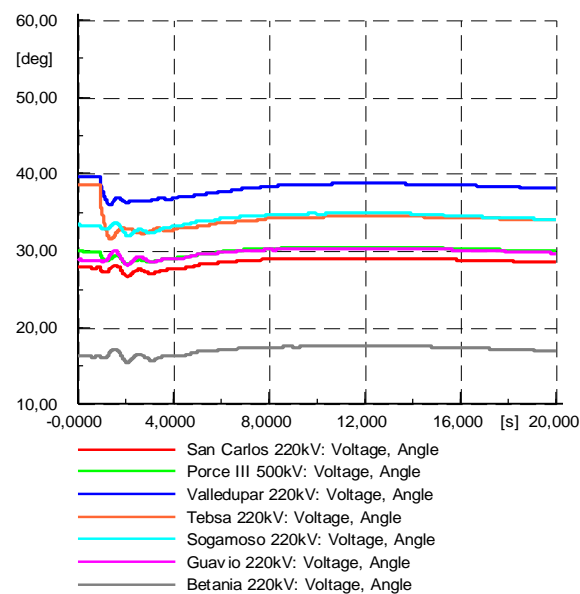
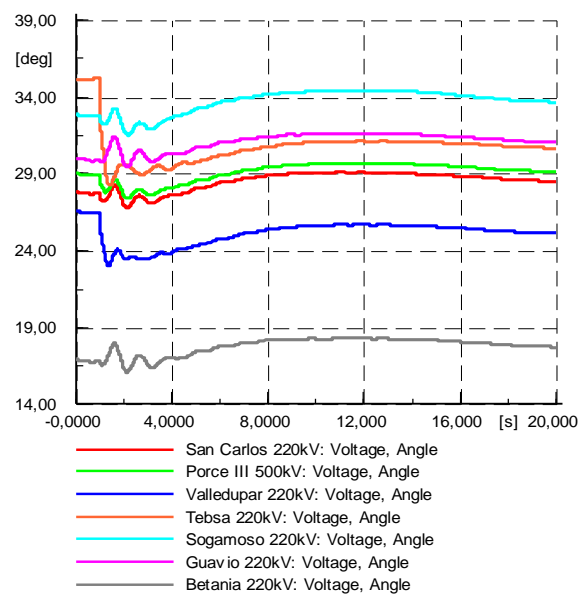
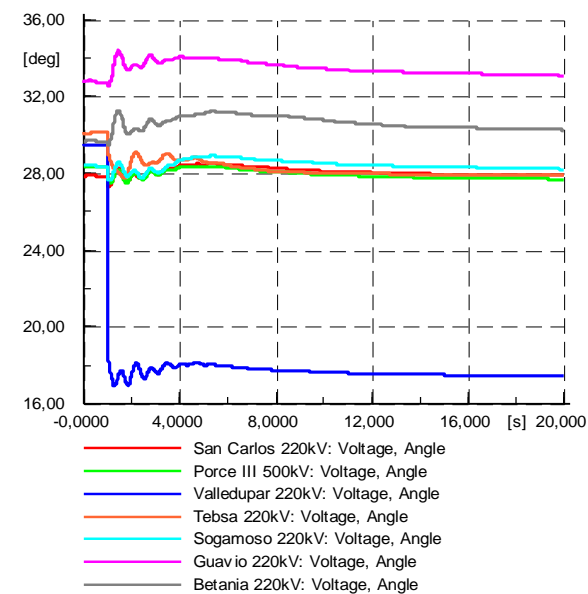
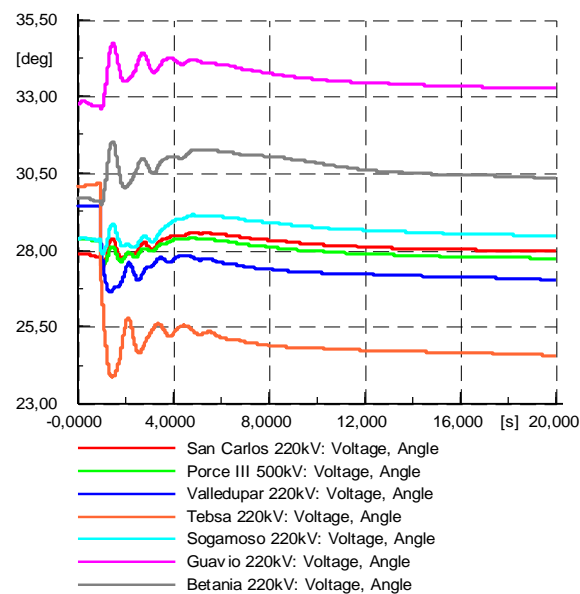
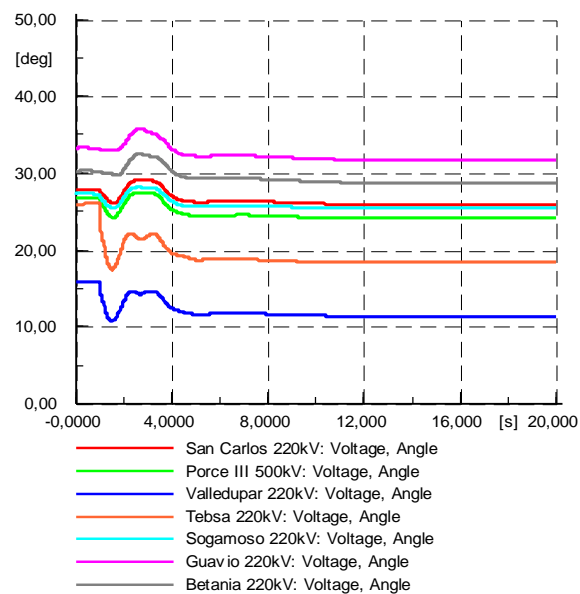


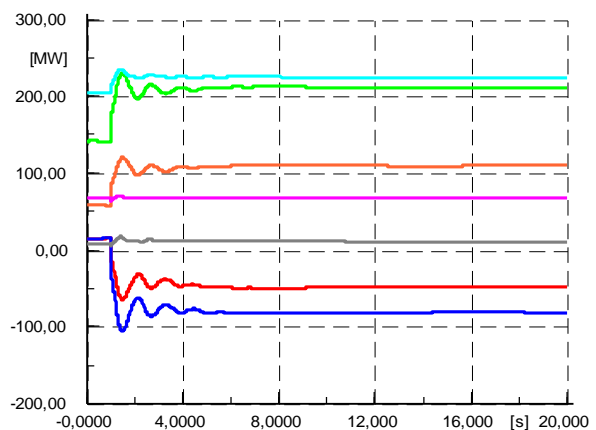
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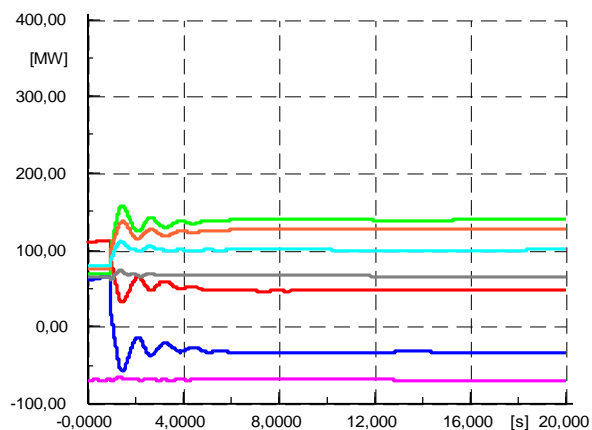
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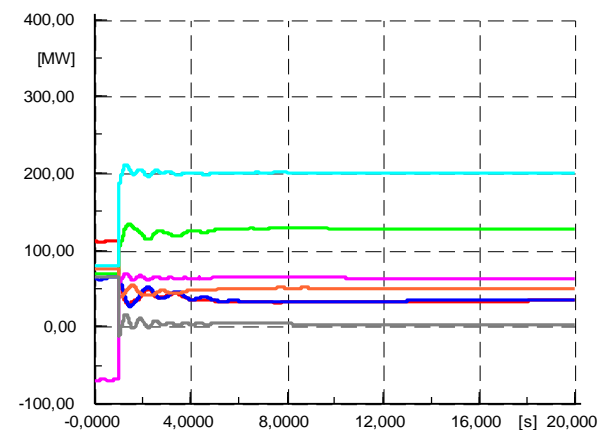




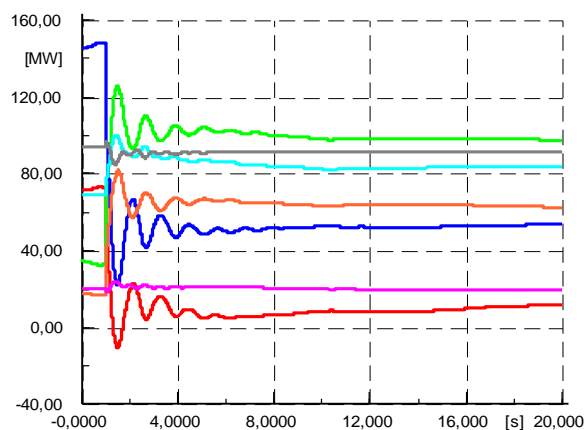
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Chinu-Cerromatoso_500kV_1: Active Power/Terminal j
Sabalarga-Chinú_500kV_1: Active Power/Terminal j
Bolivar-El Copey_500kV_1: Active Power/Terminal j
El Copey-Chinú_500kV_1: Active Power/Terminal j
El Copey-Valledupar_220kV_1: Active Power/Terminal i
Valledupar-Cuestecitas_220kV_1: Active Power/Terminal i



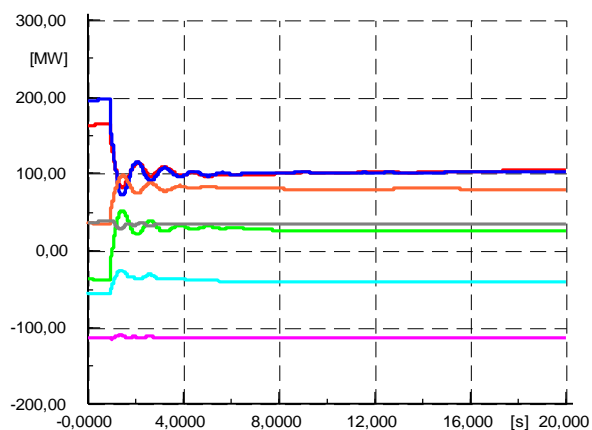
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Sabalarga-Chinú_500kV_1: Active Power/Terminal j
Bolivar-El Copey_500kV_1: Active Power/Terminal j
El Copey-Chinú_500kV_1: Active Power/Terminal j
El Copey-Valledupar_220kV_1: Active Power/Terminal i
Valledupar-Cuestecitas_220kV_1: Active Power/Terminal i



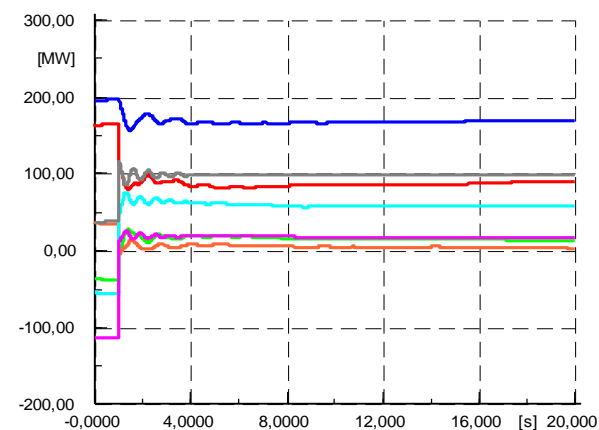
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Bolivar-El Copey_500kV_1: Active Power/Terminal j
El Copey-Chinú_500kV_1: Active Power/Terminal j
El Copey-Valledupar_220kV_1: Active Power/Terminal i
Valledupar-Cuestecitas_220kV_1: Active Power/Terminal i



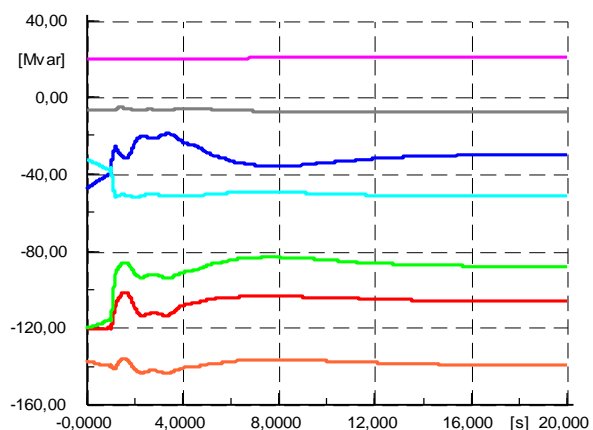
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Bolivar-El Copey_500kV_1: Active Power/Terminal j
El Copey-Chinú_500kV_1: Active Power/Terminal j
El Copey-Valledupar_220kV_1: Active Power/Terminal i
Valledupar-Cuestecitas_220kV_1: Active Power/Terminal i



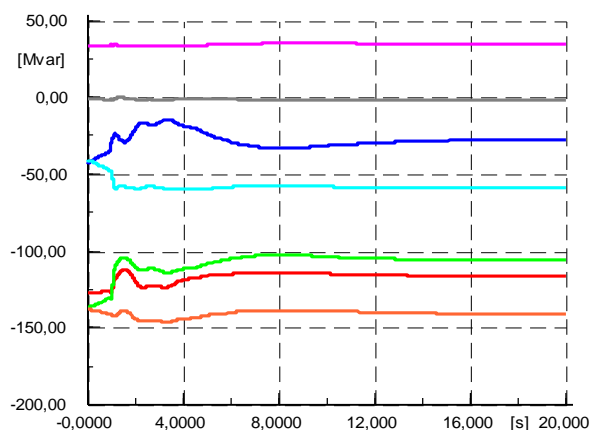
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Bolivar-El Copey_500kV_1: Active Power/Terminal j
El Copey-Chinú_500kV_1: Active Power/Terminal j
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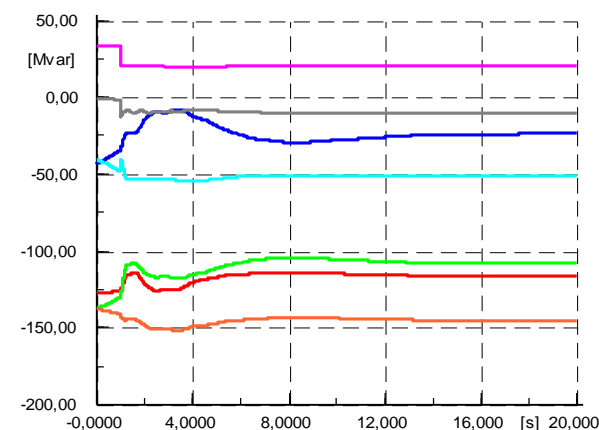
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Bolivar-El Copey_500kV_1: Active Power/Terminal j
El Copey-Chinú_500kV_1: Active Power/Terminal j
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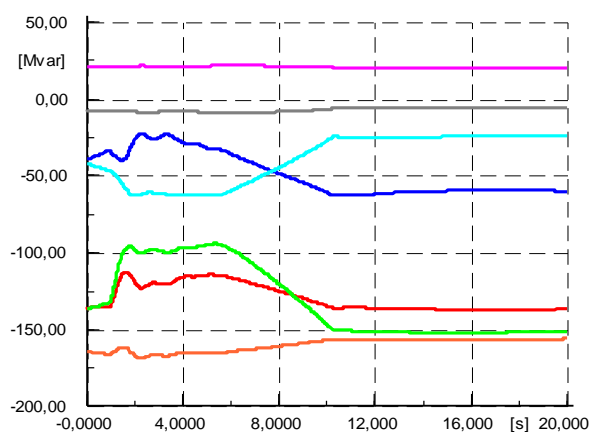
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 Bolivar-El Copey _500kV_1: Reactiv e Power/Terminal i
 El Copey -Chinú_500kV_1: Reactiv e Power/Terminal i
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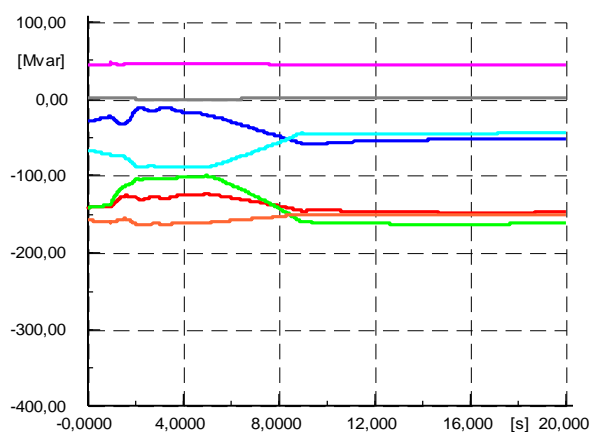
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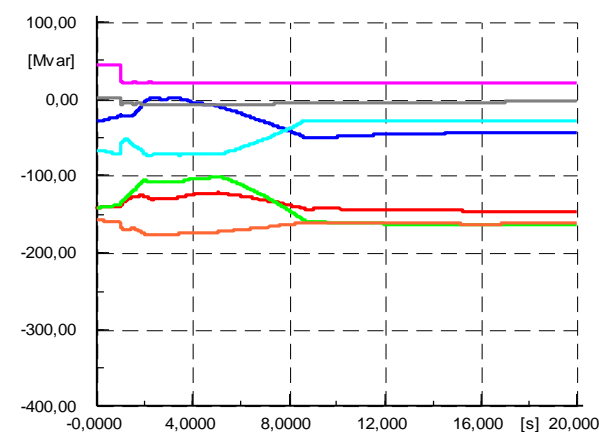
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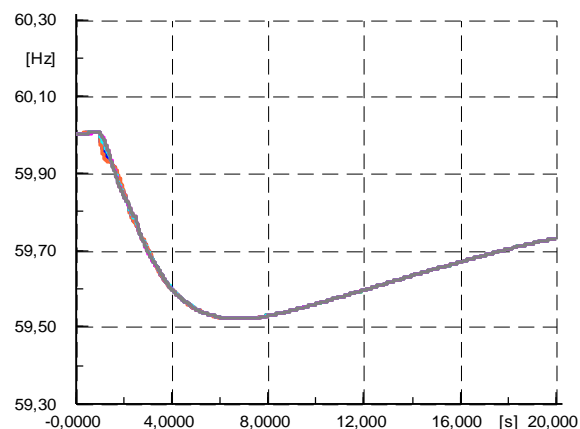
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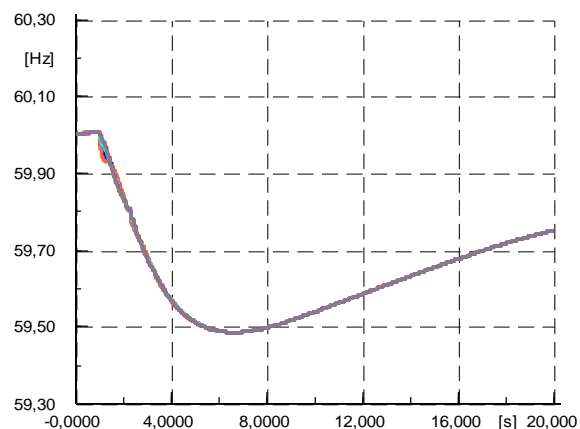
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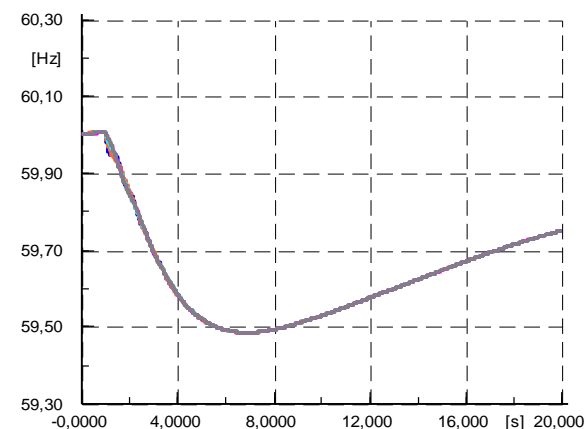
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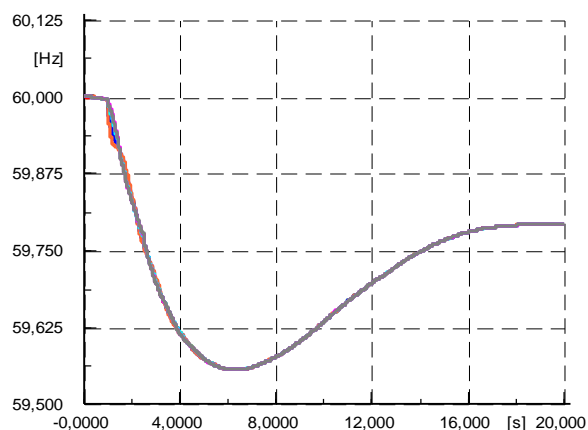
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 Porce III 500kV: Electrical Frequency
 Valledupar 220kV: Electrical Frequency
 Tebsa 220kV: Electrical Frequency
 Sogamoso 220kV: Electrical Frequency
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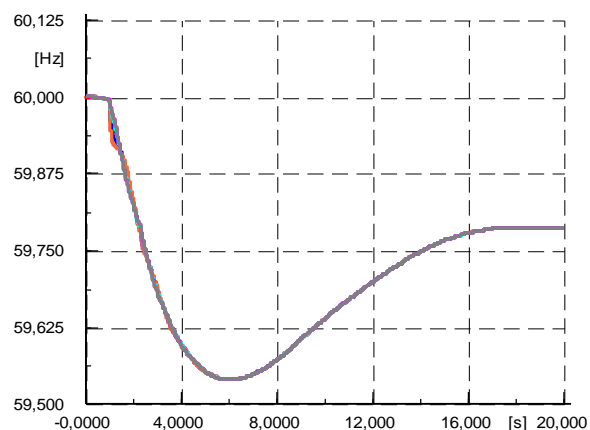
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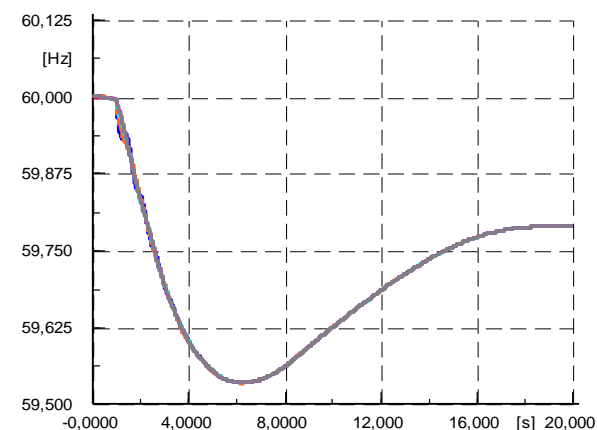
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 Guavio 220kV: Electrical Frequency
 Betania 220kV: Electrical Frequency



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 Tebsa 220kV: Electrical Frequency
 Sogamoso 220kV: Electrical Frequency
 Guavio 220kV: Electrical Frequency
 Betania 220kV: Electrical Frequency