

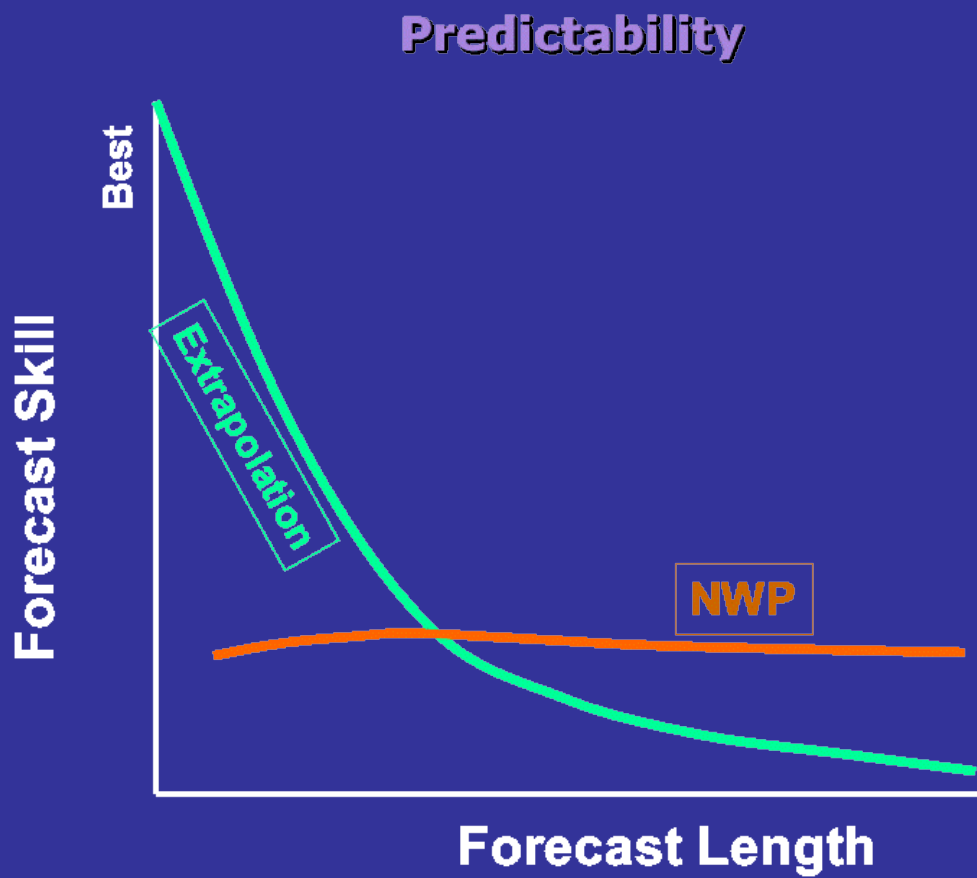


Estratégias para redução de spin-up em modelos de mesoescala para a aplicação em nowcasting

Edmilson Dias de Freitas, Luiz A. T. Machado, Rachel Albrecht, Éder Vendrasco, Madeleine Sanchez, Lianet Hernandez, Micael Cecchini, Andréia Bender, Isabela Siqueira, Jean Peres, Enzo Todesco



Motivação

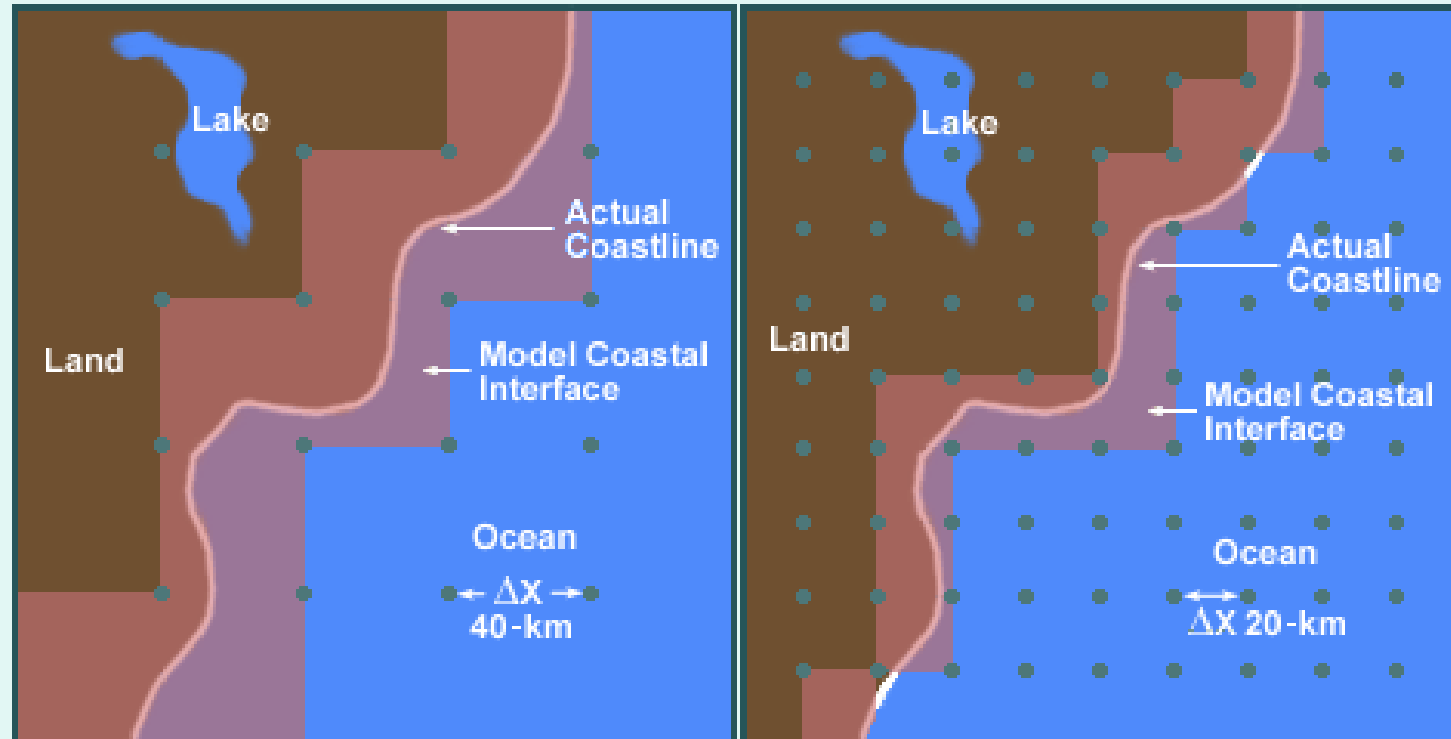




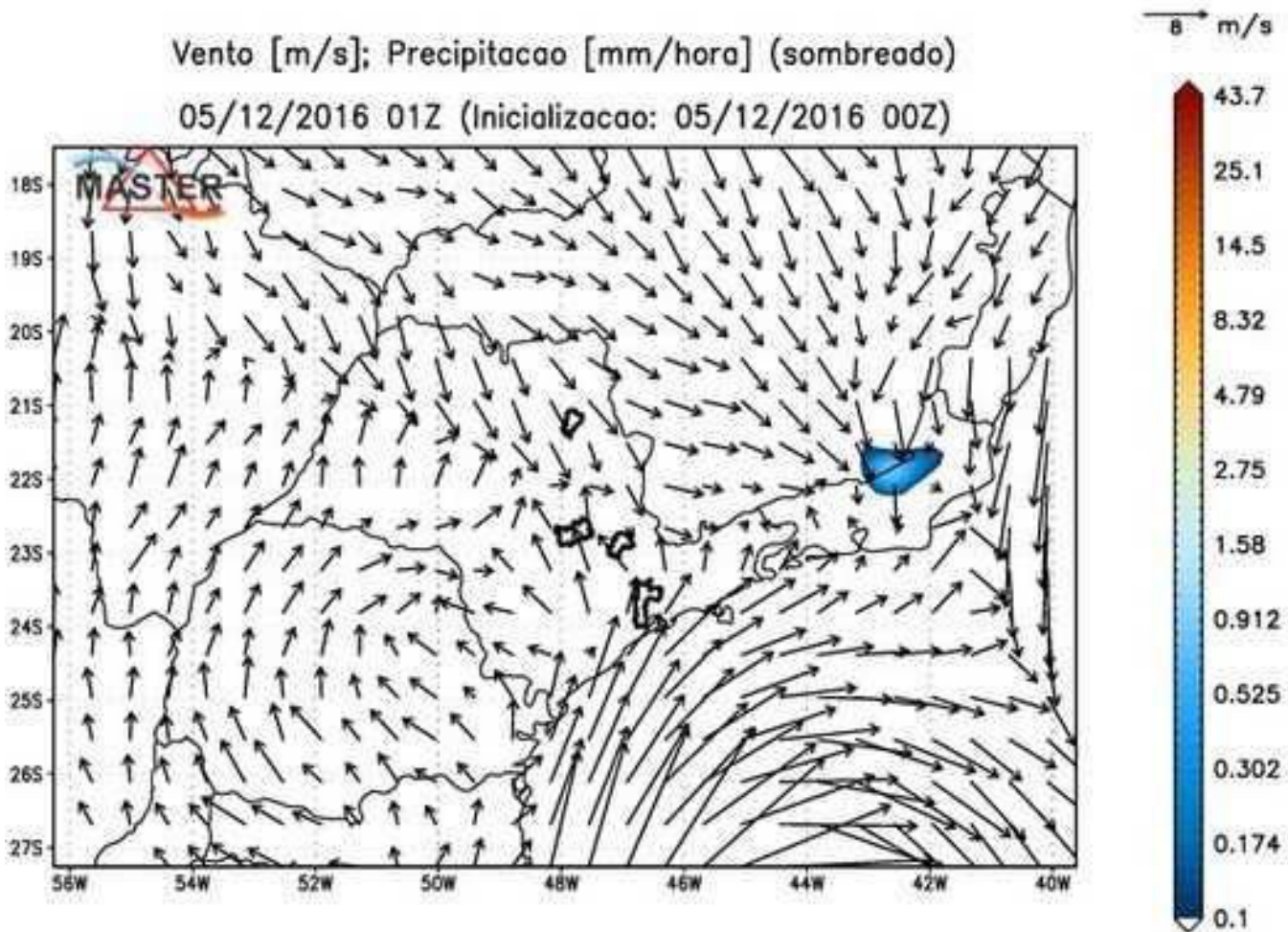
Spinup: O que é?

- “Desequilíbrio” verificado em modelos numéricos em função de disparidades entre a grade utilizada e informações originais necessárias para as integrações;
 - Condição Inicial (CI);
 - Condição de Fronteira (CF).

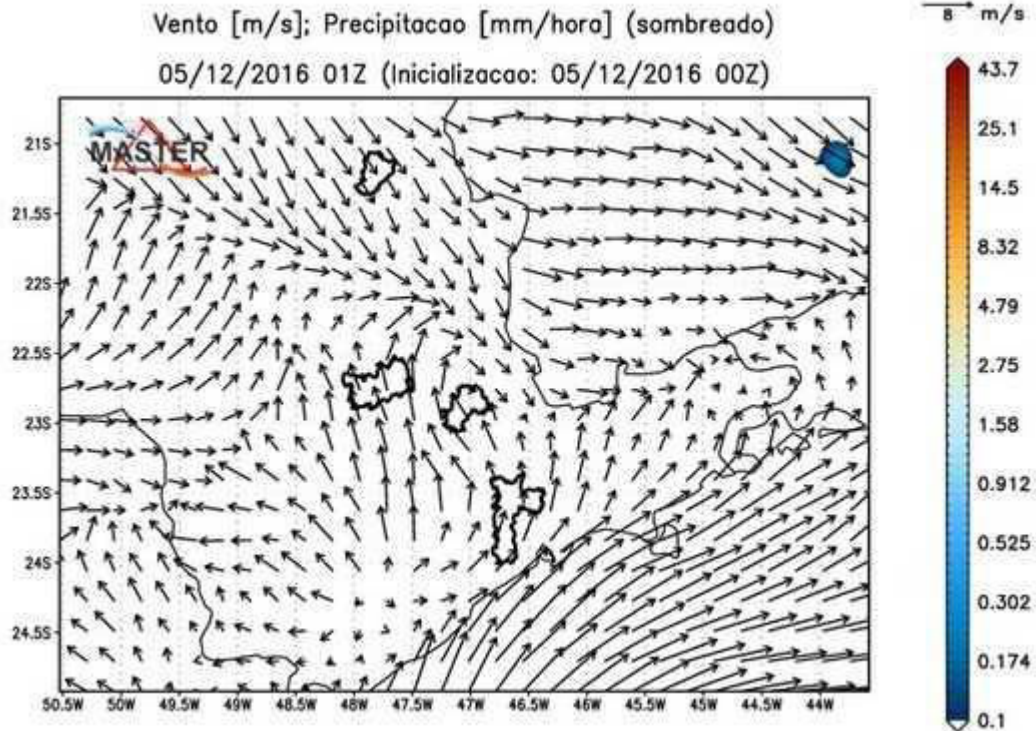
De onde vem a CI?



Área coberta nas simulações

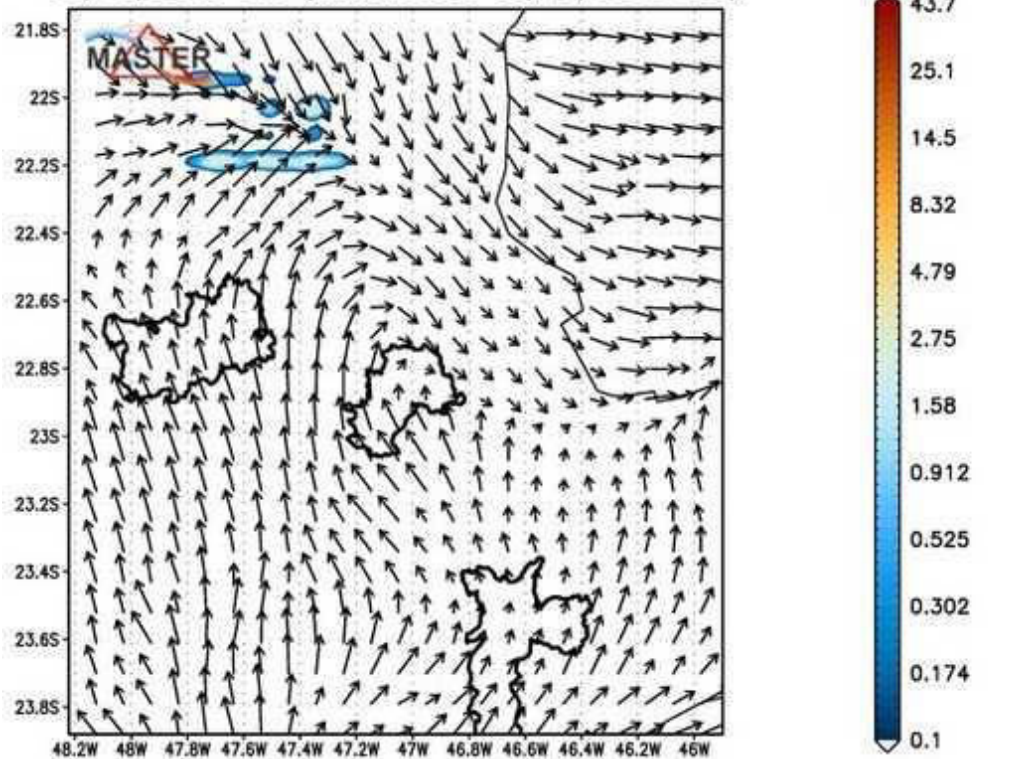


Área coberta nas simulações



Área coberta nas simulações

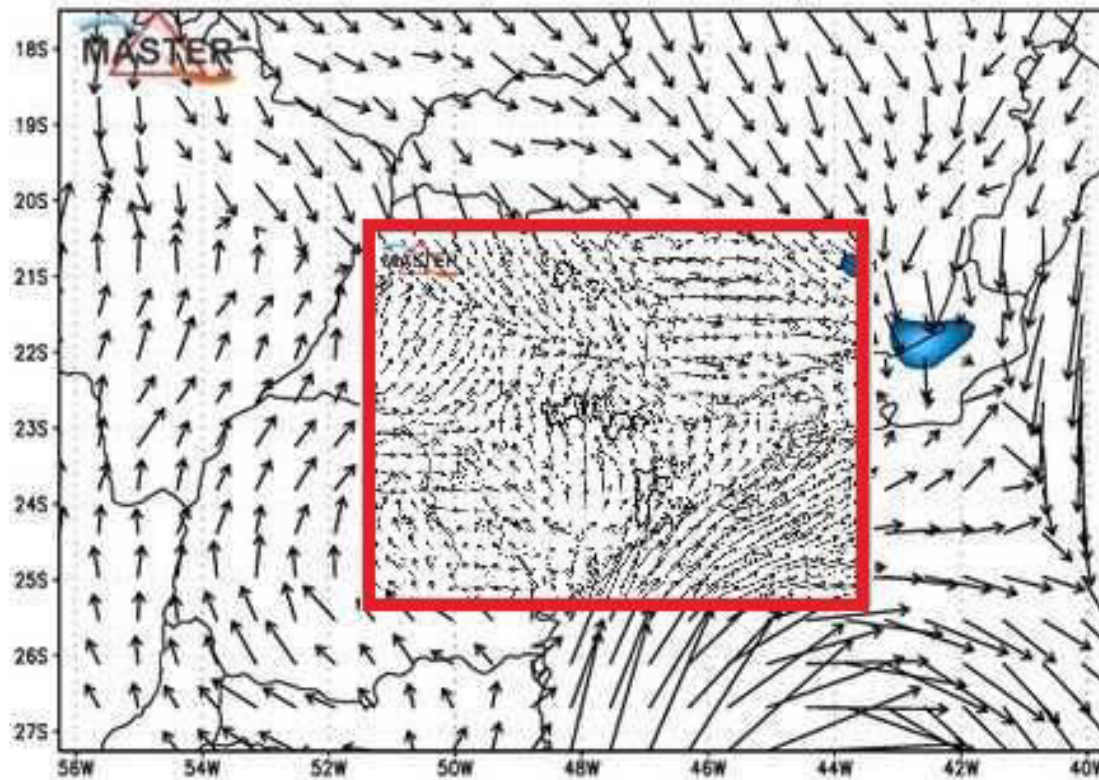
Vento [m/s]; Precipitacao [mm/hora] (sombreado)
05/12/2016 01Z (Inicializacao: 05/12/2016 00Z)



Aninhamento de grades

Vento [m/s]; Precipitacao [mm/hora] (sombreado)

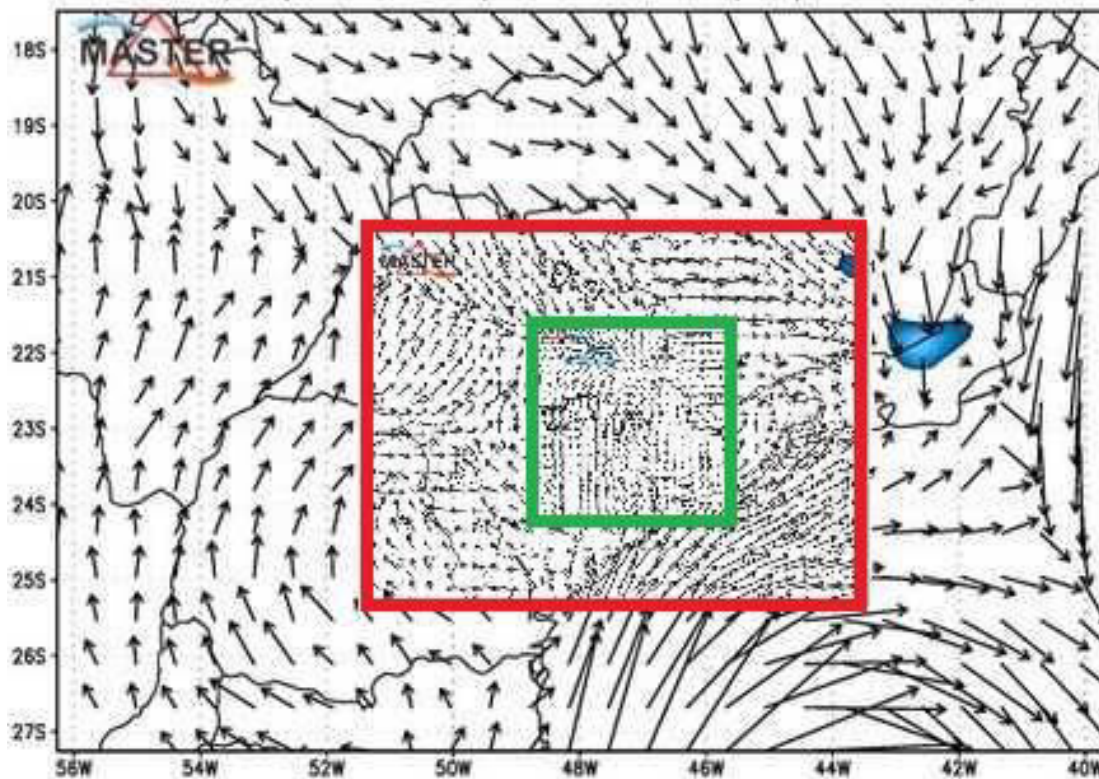
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Aninhamento de grades

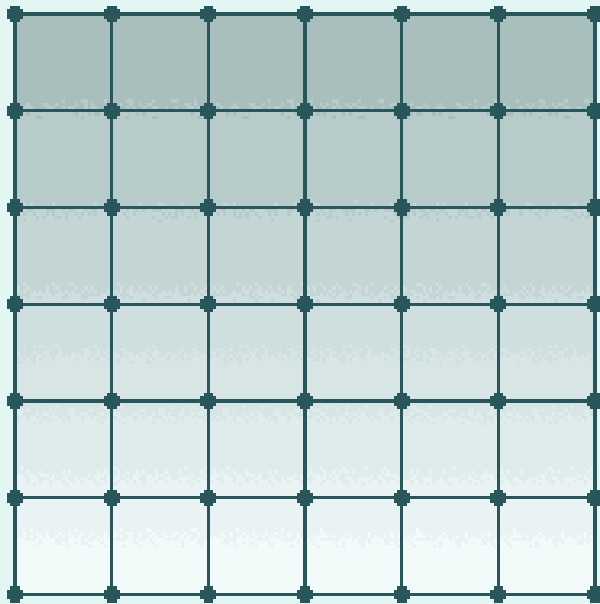
Vento [m/s]; Precipitacao [mm/hora] (sombreado)

05/12/2016 01Z (Inicializacao: 05/12/2016 00Z)

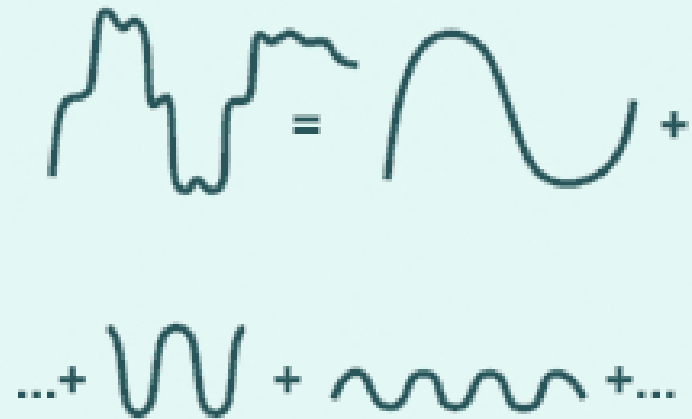


Resolução Horizontal

Grid-point model resolution:
Related to grid spacing and
number of grid points

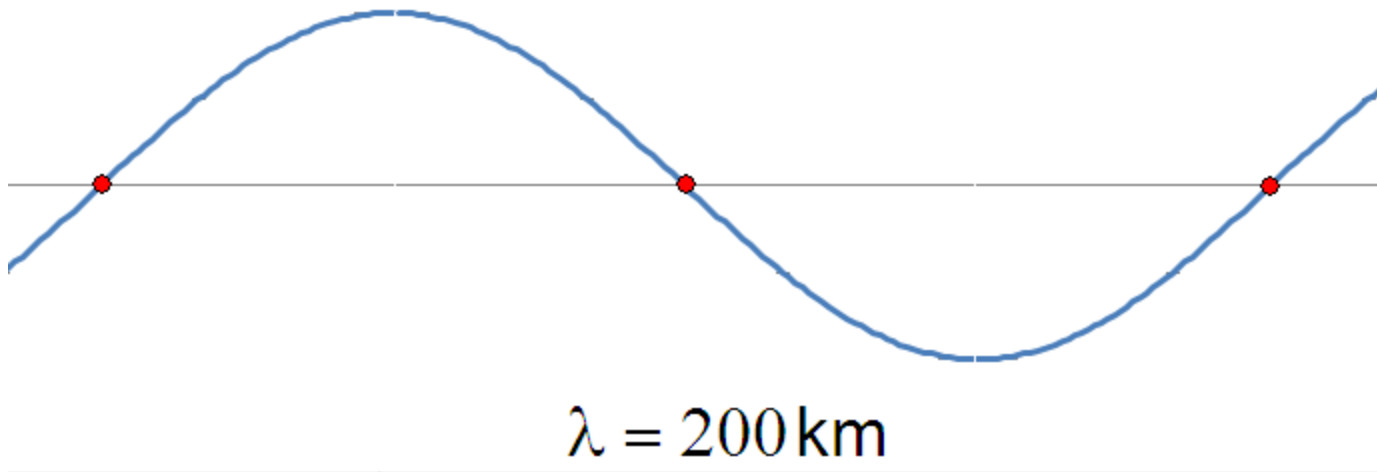


Spectral model resolution:
Related to number of waves
used to represent the data



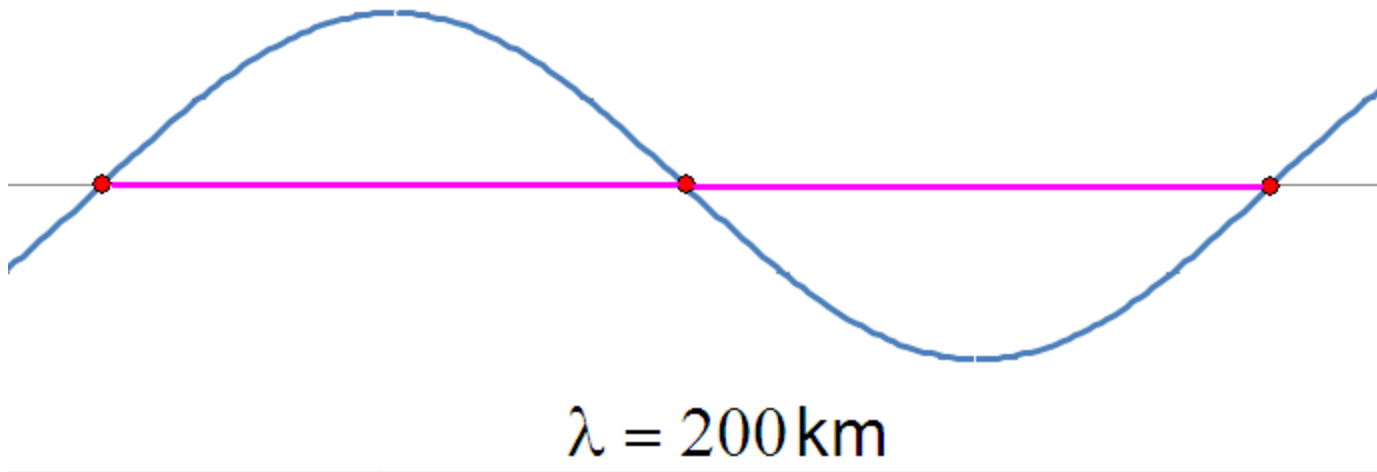


Exemplo: onda de 200 km



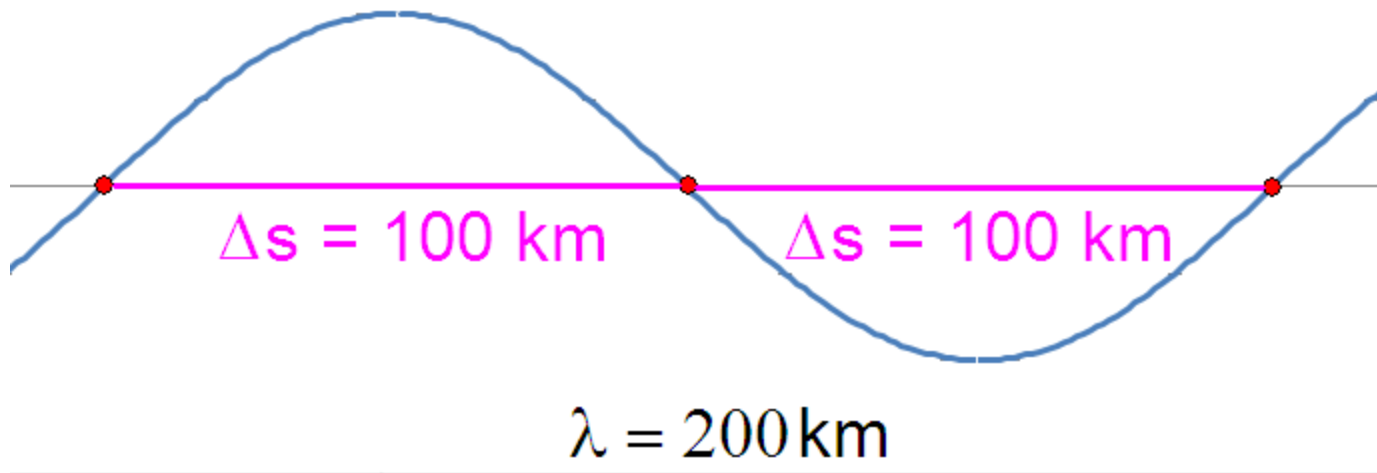


Exemplo: onda de 200 km

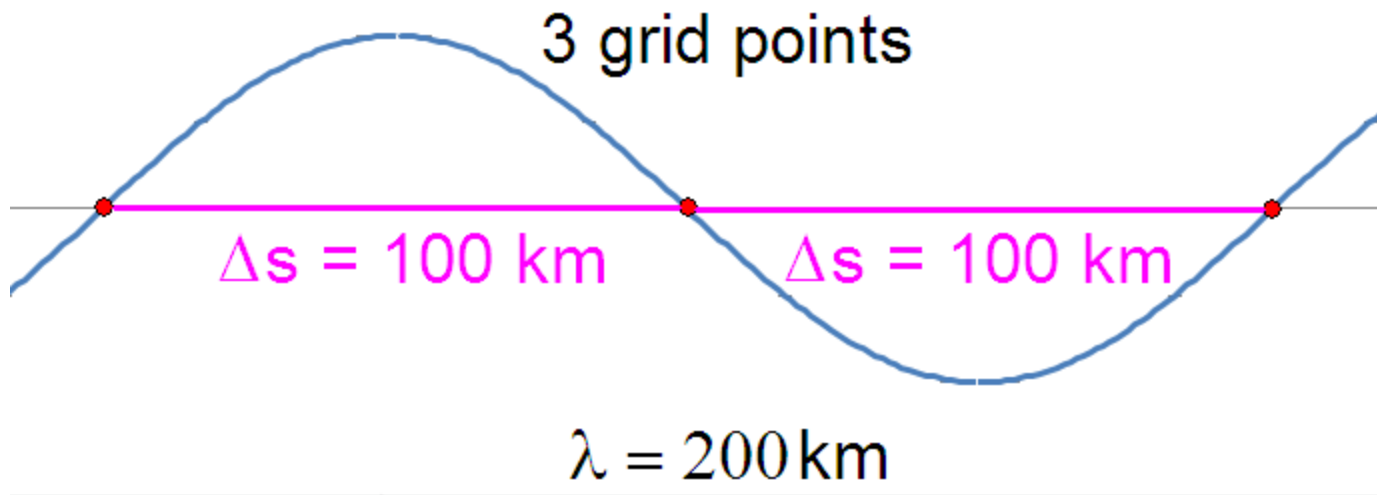




Exemplo: onda de 200 km

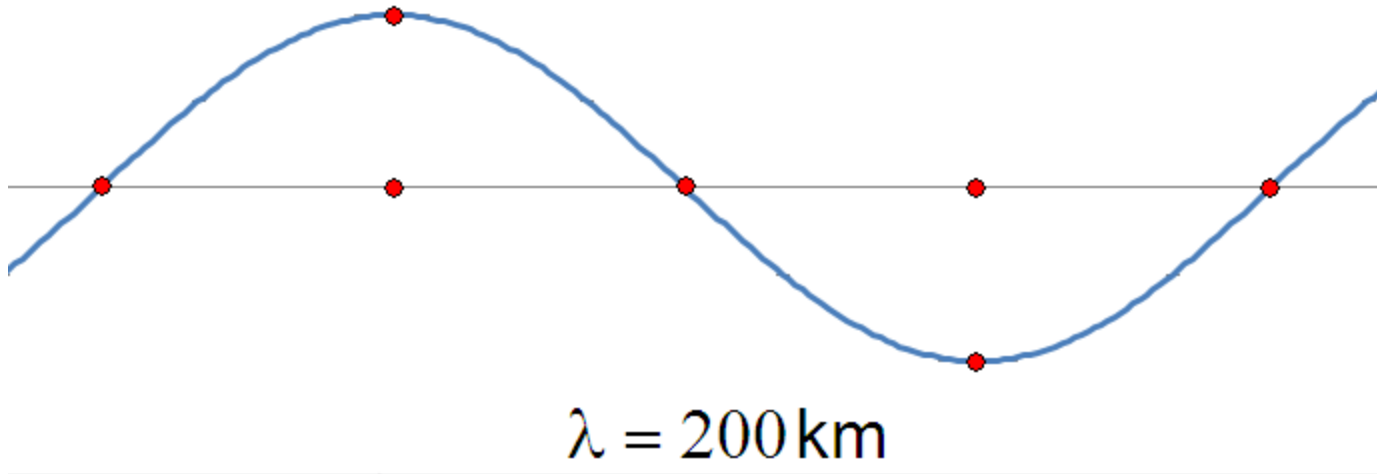


Exemplo: onda de 200 km

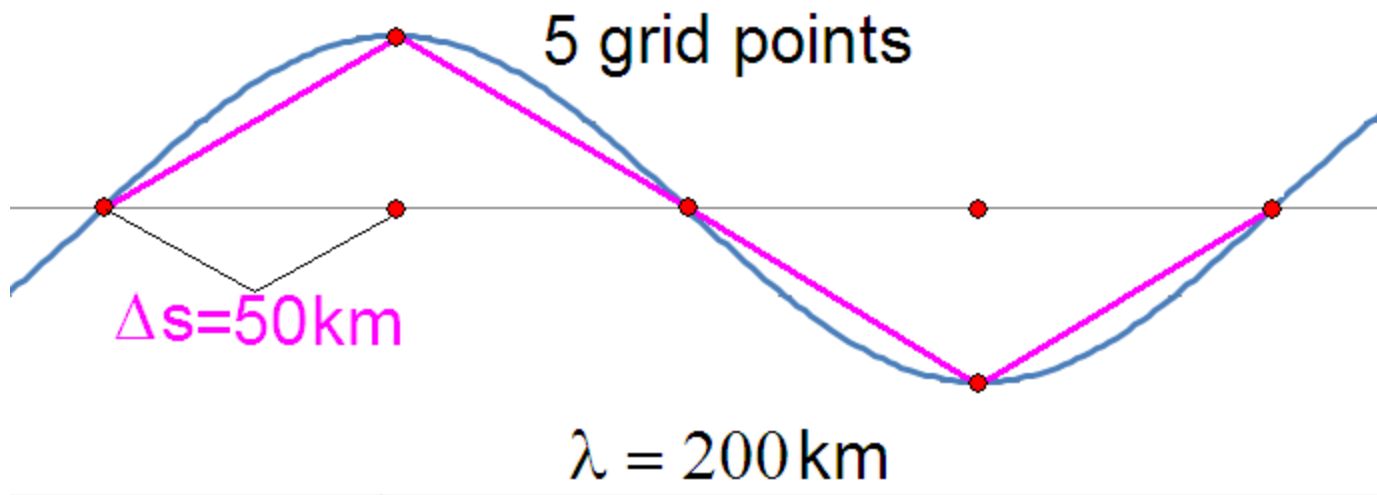




Exemplo: onda de 200 km

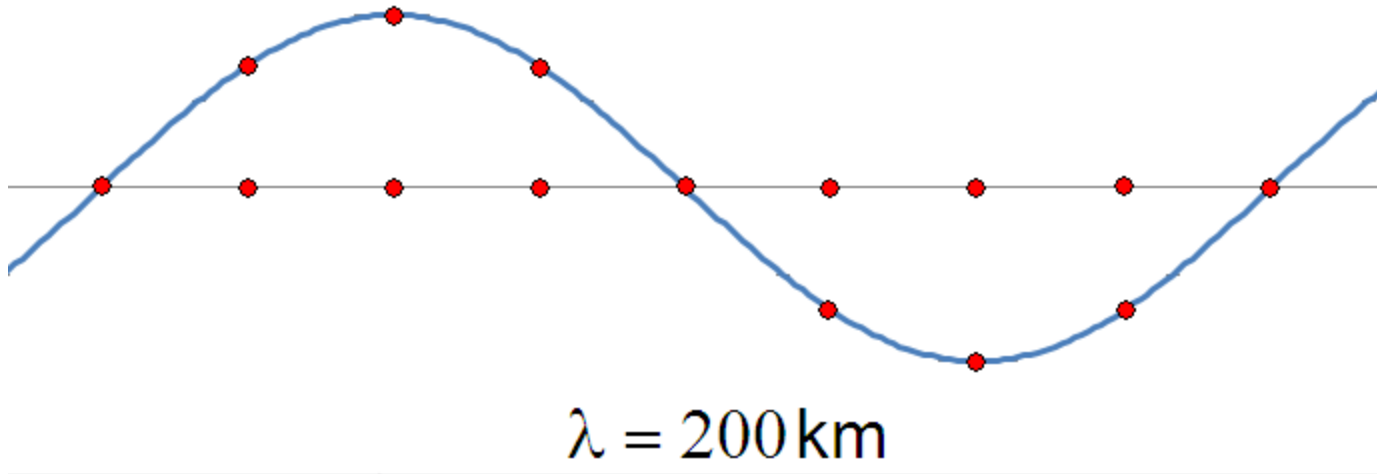


Exemplo: onda de 200 km

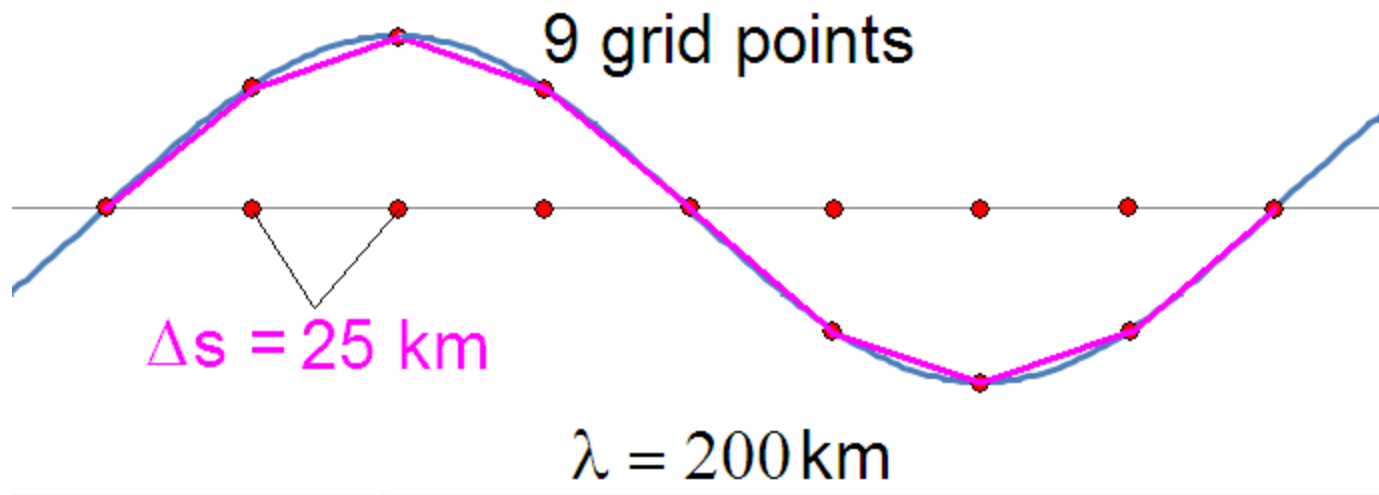




Exemplo: onda de 200 km



Exemplo: onda de 200 km



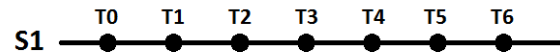


Alternativas para redução do problema

- Melhoria das condições iniciais e de fronteira;
 - Inserção de maior número de dados observados;
 - Superfície, sondagens, radar;
 - Condição de Fronteira (CF);
 - Procedimentos estatísticos para a assimilação e geração da CI.

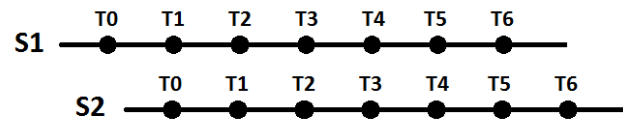


Método proposto



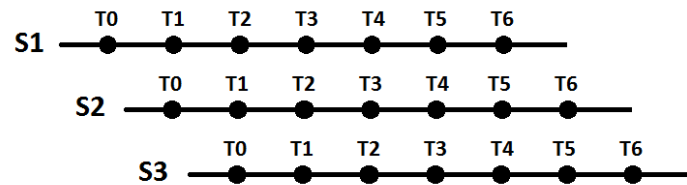


Método proposto

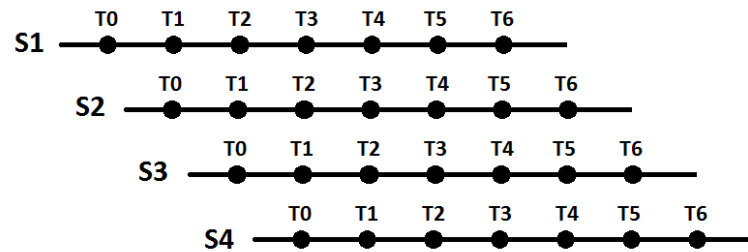




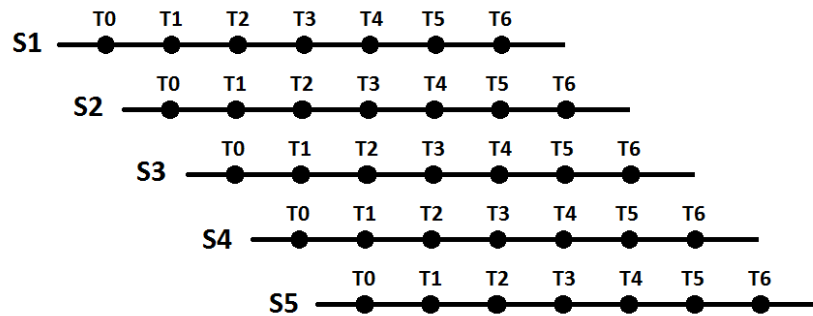
Método proposto



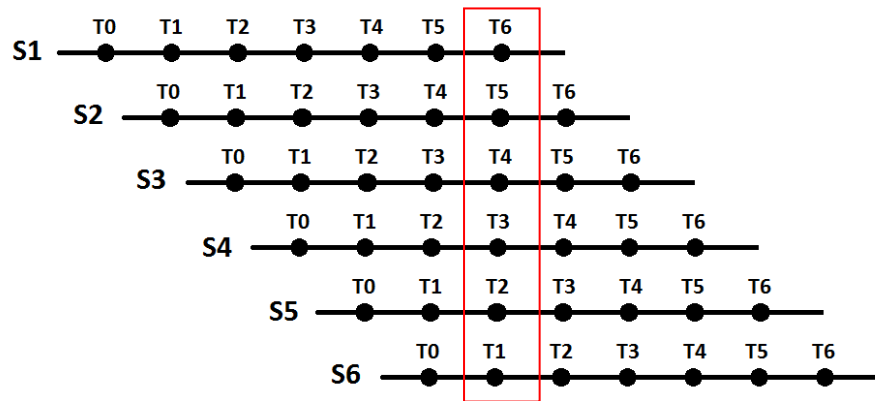
Método proposto



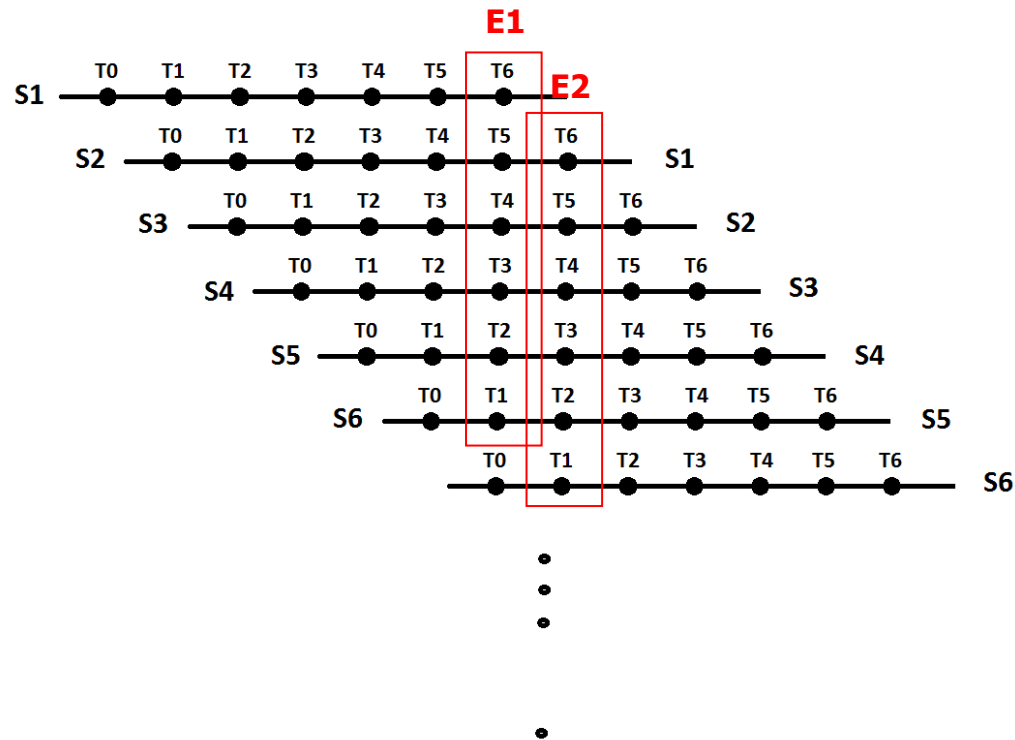
Método proposto



Método proposto



Método proposto





Perspectivas

- Criação do ciclo para os dois modelos (BRAMS e WRF);
- Melhoria do skill das previsões em curtíssimo prazo.



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Obrigado

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