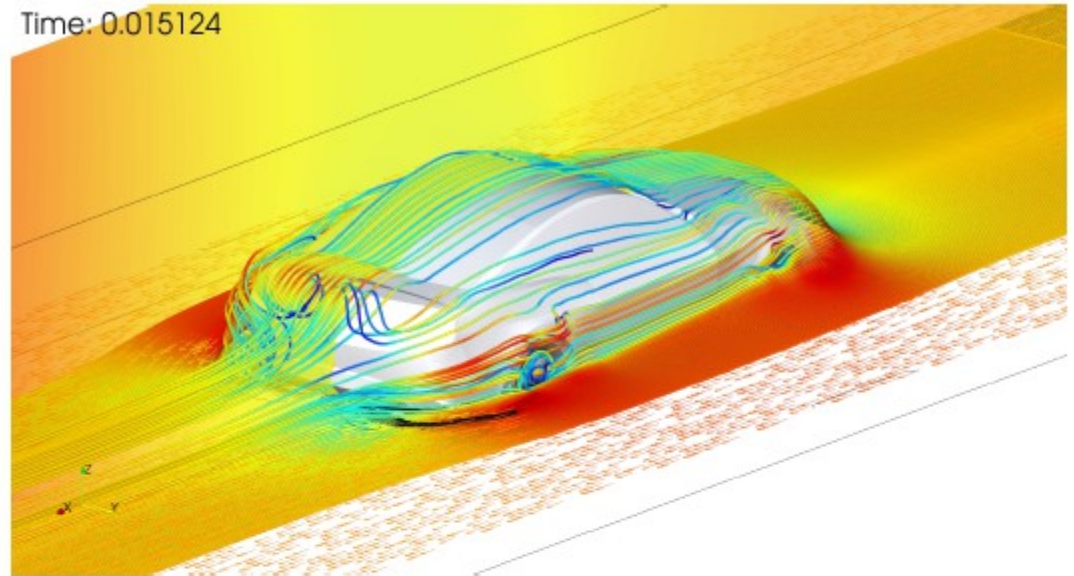
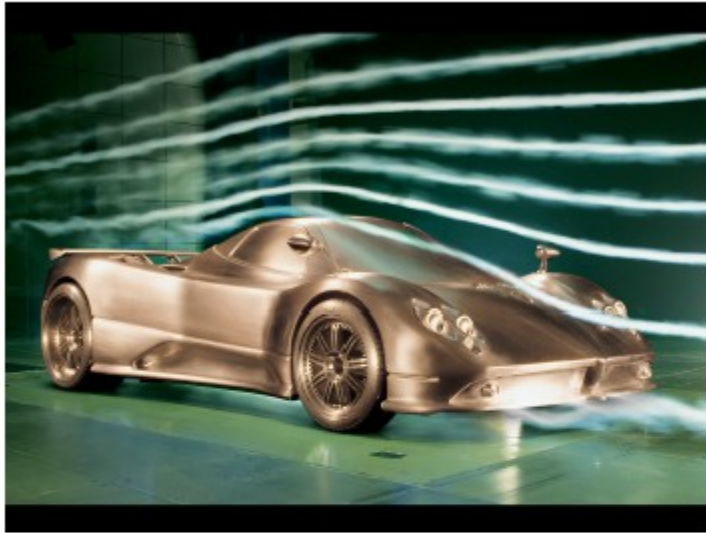




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- AIMIRIM:
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 - Dra. Eng. Millena Martins Villar Vale
 - Dr. Eng. João Marcelo Vedovoto
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 - Laboratório de Mecânica dos Fluidos – MFLab-UFU
 - Algar Agro
 - CIAEM
- Clientes:
 - Petrobras
 - Algar Tech
 - Algar Agro



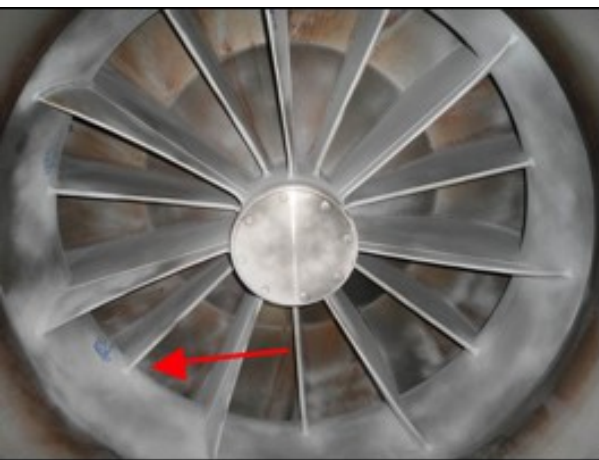
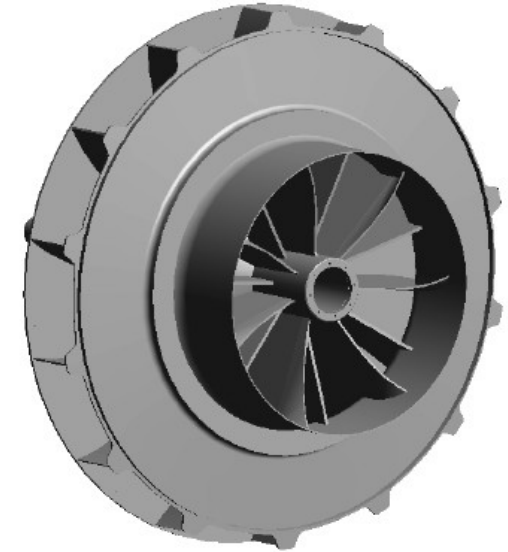
$$\frac{\partial \bar{\rho}}{\partial t} + \frac{\partial \bar{\rho} \tilde{u}_i}{\partial x_i} = 0$$

$$\frac{\partial \bar{\rho} \tilde{u}_i}{\partial t} + \frac{\partial \bar{\rho} \tilde{u}_i \tilde{u}_j}{\partial x_j} = -\frac{\partial \bar{p}}{\partial x_i} + \frac{\partial}{\partial x_j} \left[(\mu + \mu_{SGS}) \left(\frac{\partial \tilde{u}_i}{\partial x_j} + \frac{\partial \tilde{u}_j}{\partial x_i} - \frac{2}{3} \frac{\partial \tilde{u}_k}{\partial x_k} \delta_{ij} \right) \right]$$

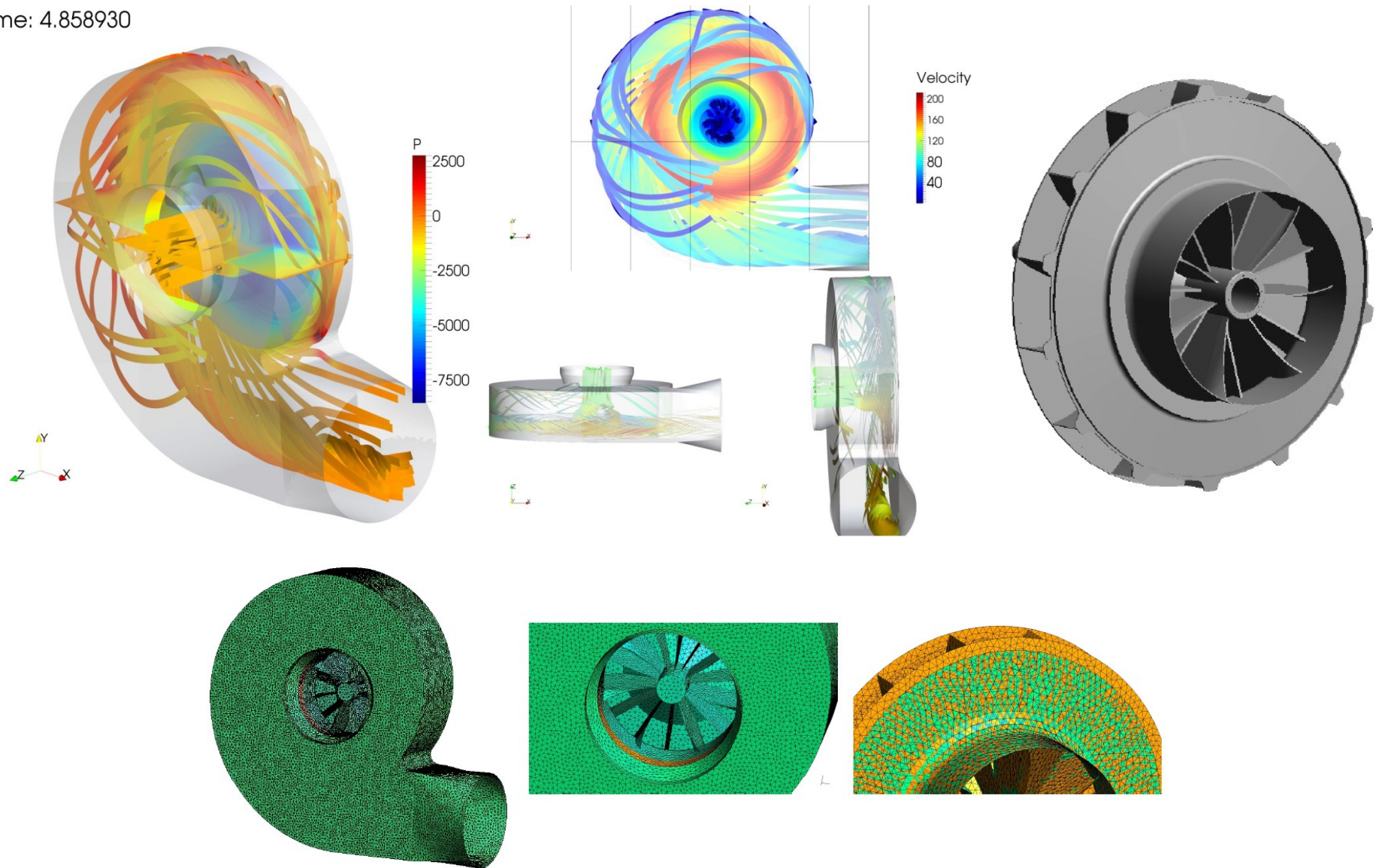
Flow inside fans

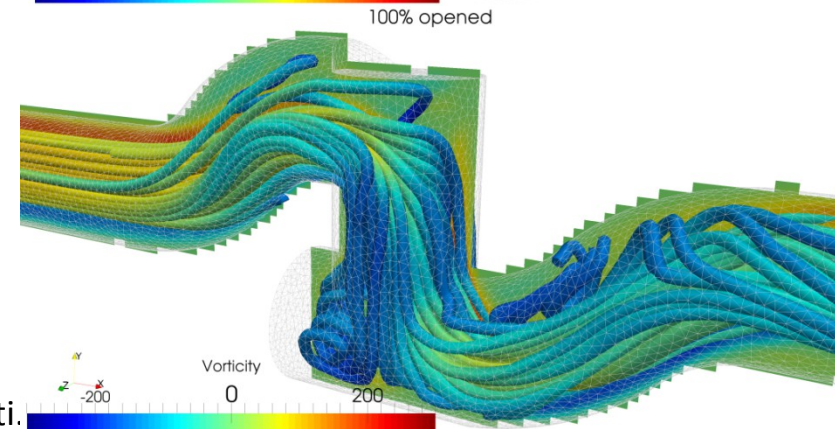
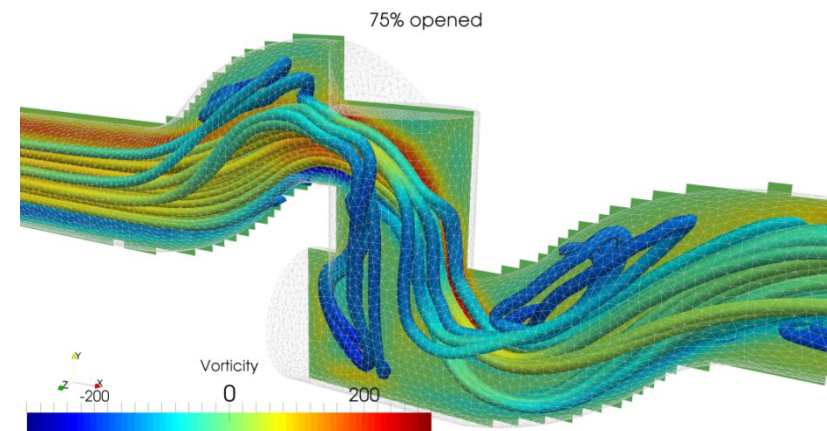
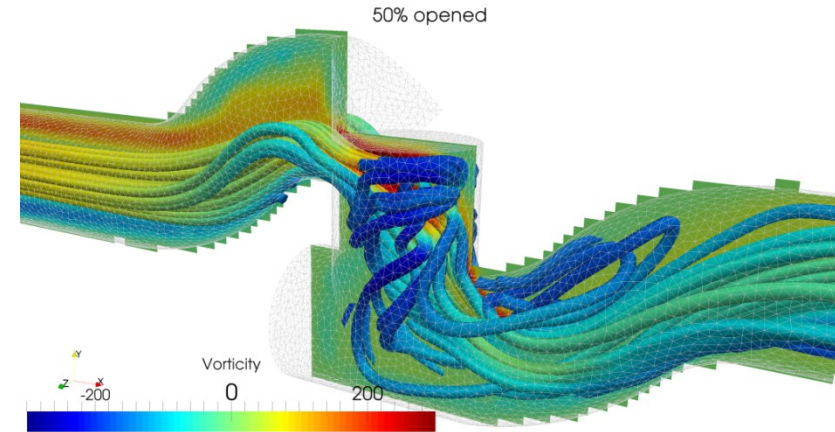


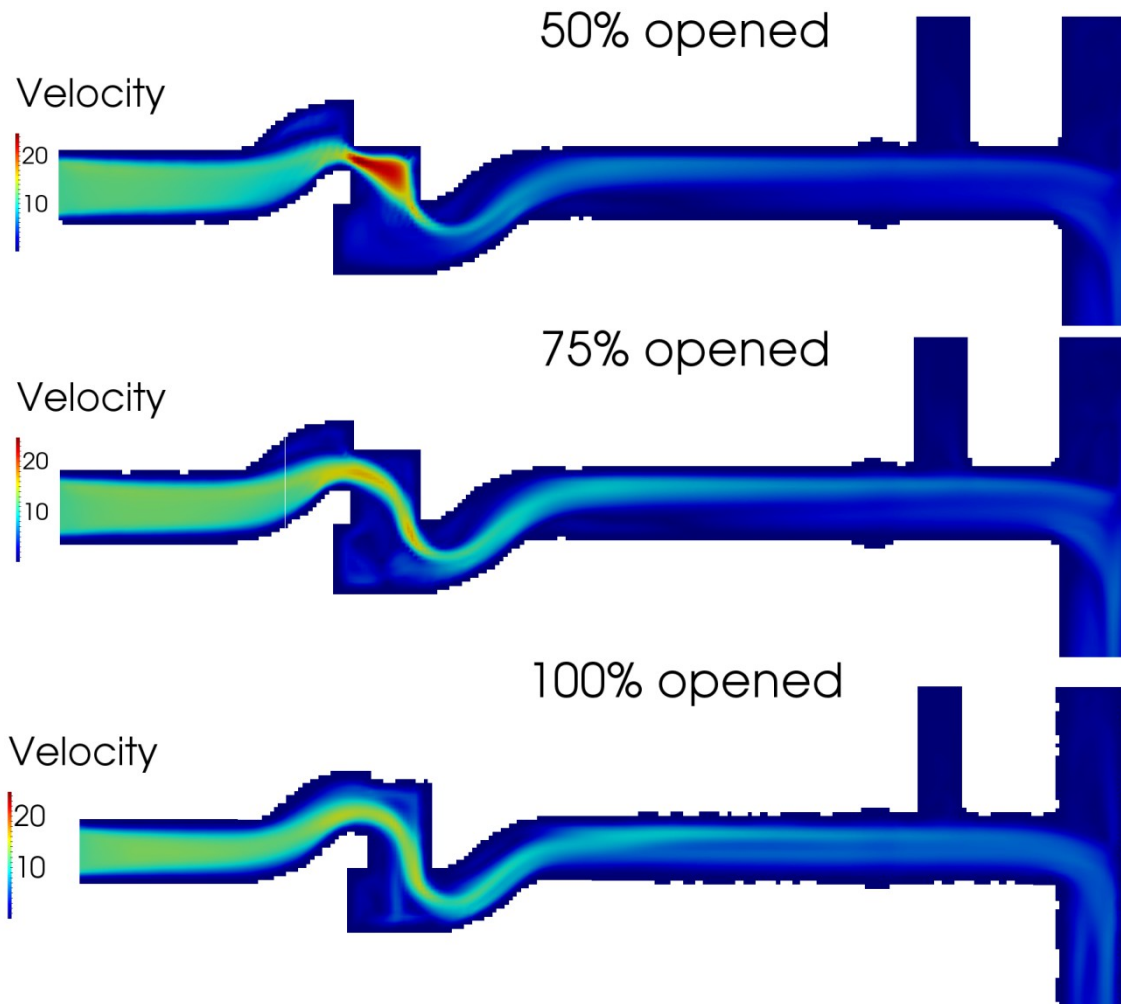
- General simulation data:
 - Volumetric flow: 60 T/h, or 16 Nm^3/s @ RPM;
 - Work temperature 69.2 °C;
 - Fluid specific mass:
 $\rho = 0.5842 \text{ kg/m}^3$;
 - Dynamic viscosity: $8.659 \times 10^{-6} \text{ Pa.s}$;
 - Maximum Reynolds number (inlet based), aprox. 2.2 million;
 - Maximum resulting Reynolds number (rotor velocity based), aprox. 36.85 million;



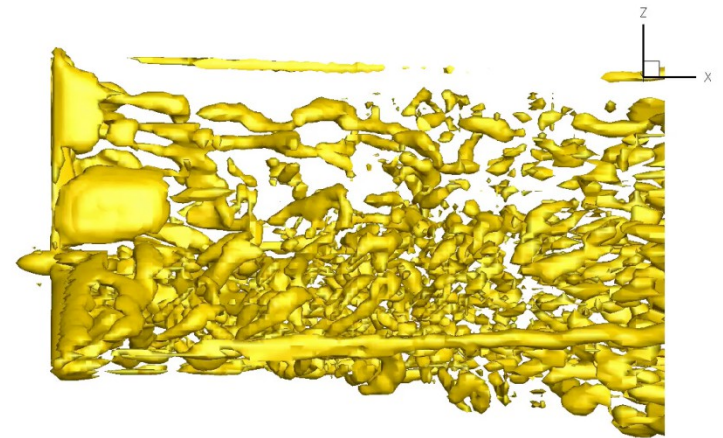
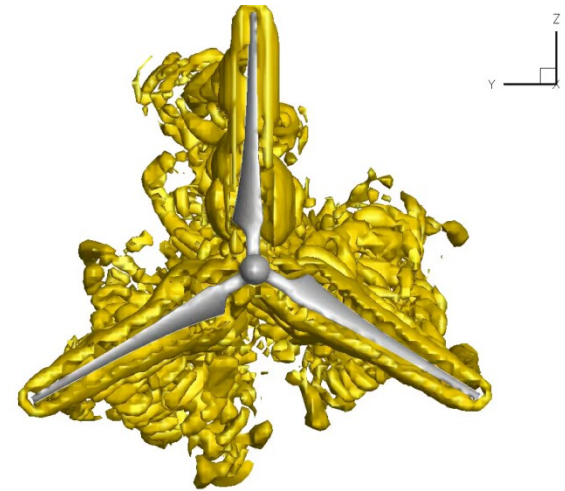
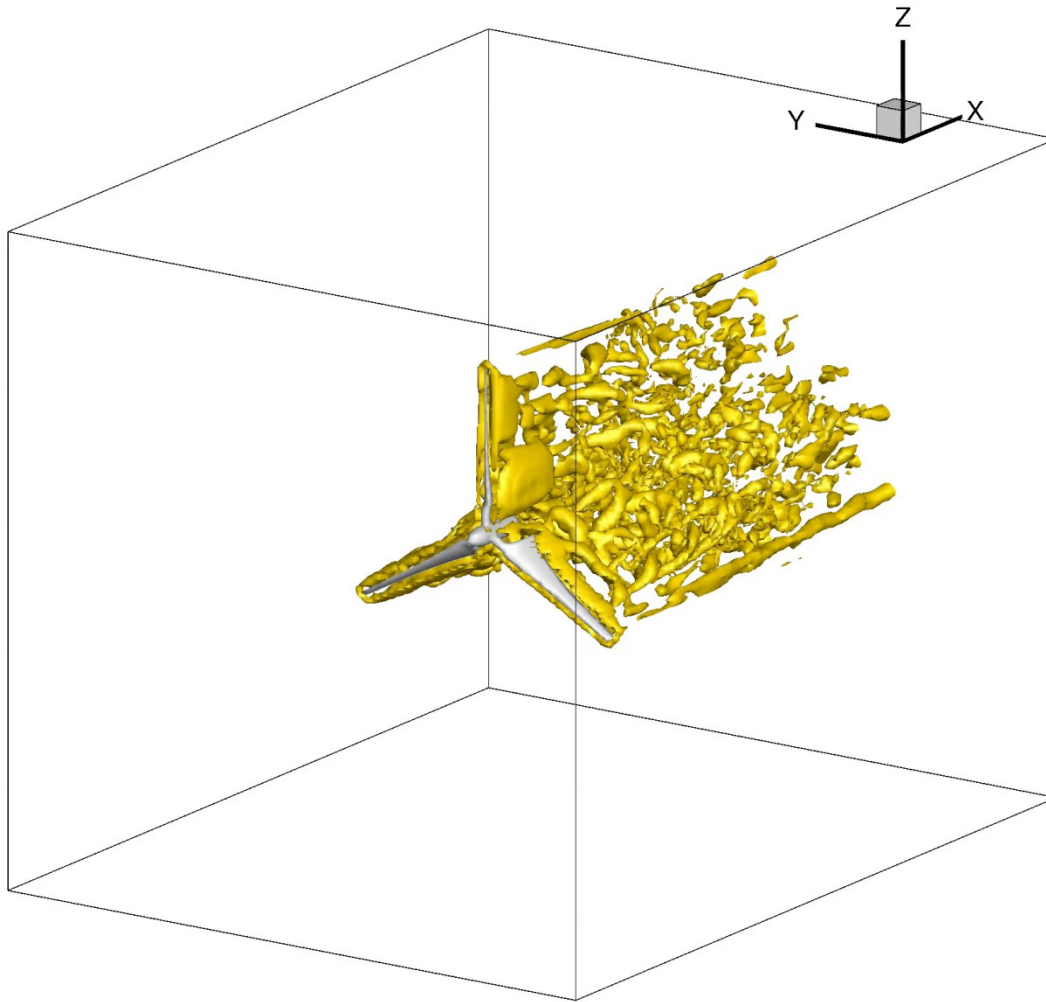
Time: 4.858930



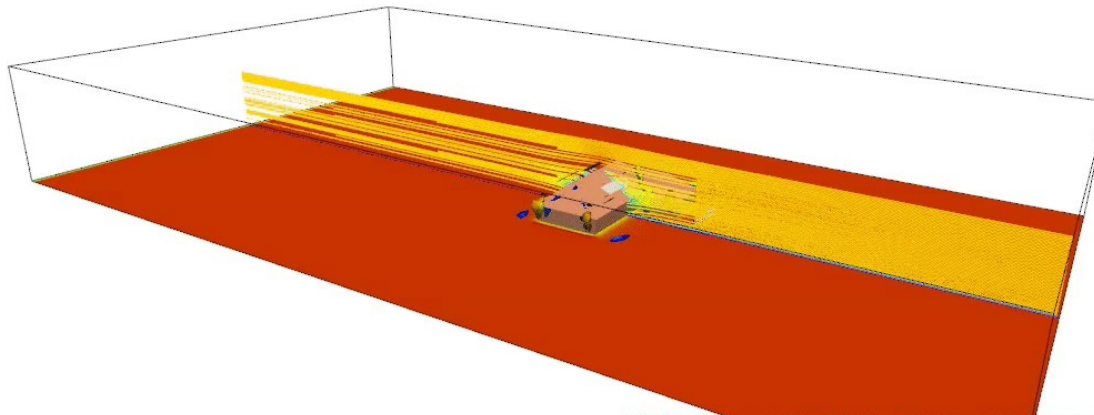




Energia Eólica



Time: 0.008333

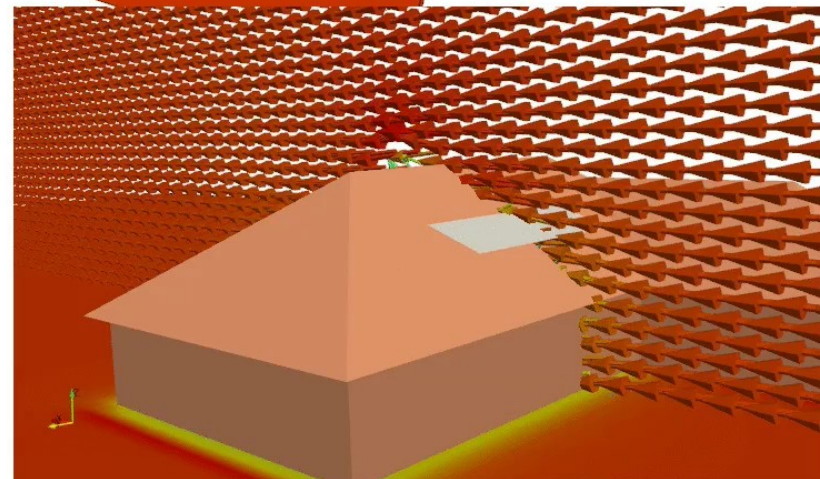
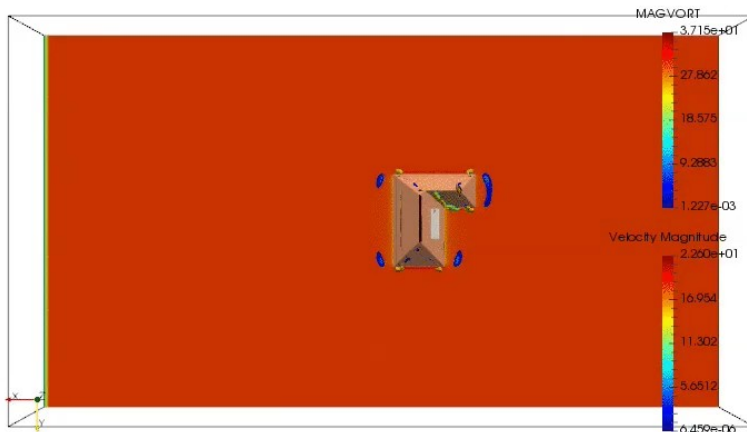


Velocity Magnitude

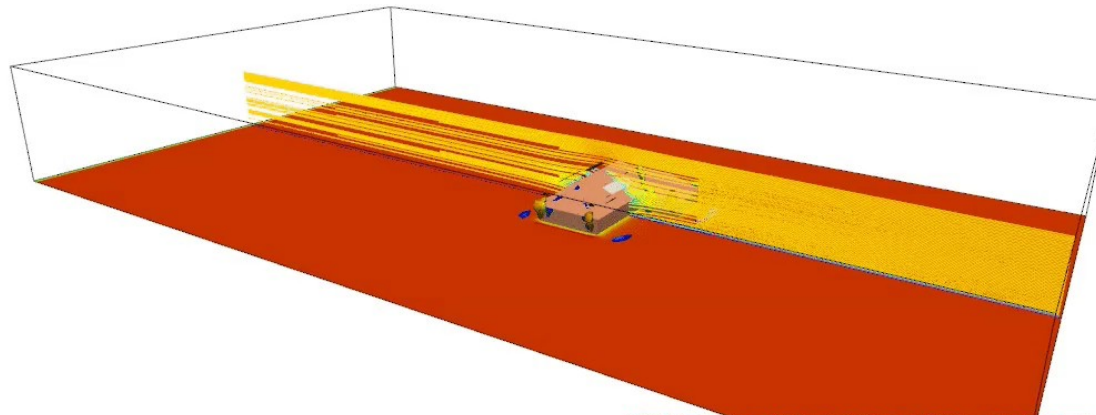
2.260e+01
16.954
11.302
5.6512
6.459e-06

MAGVORT

3.715e+01
27.862
18.575
9.2883
1.227e-03

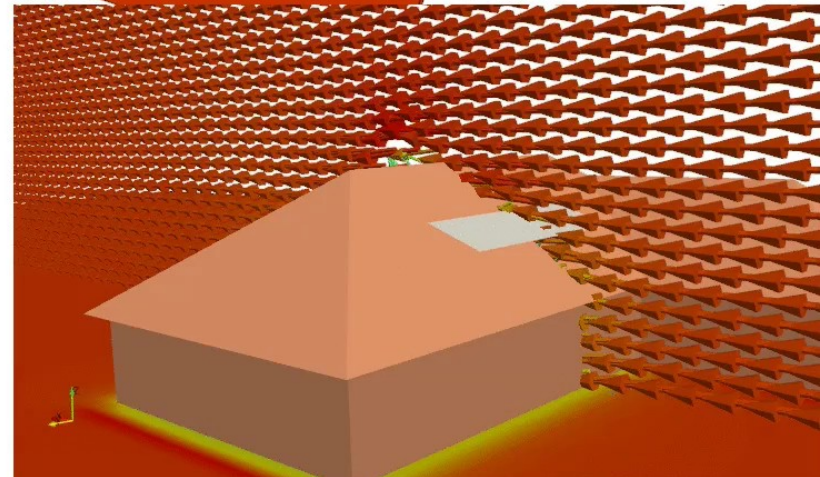
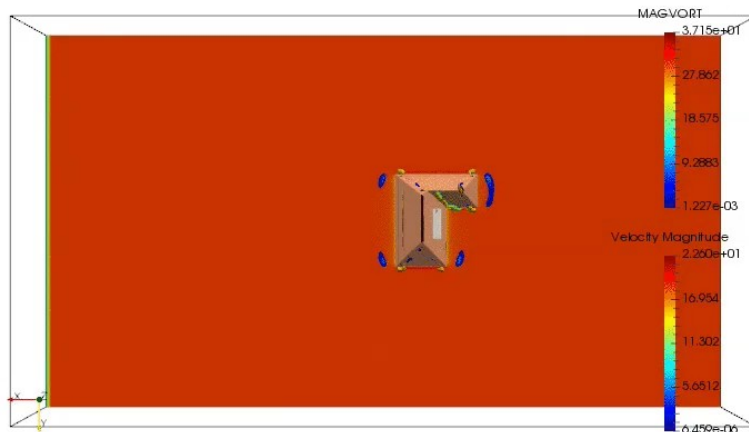


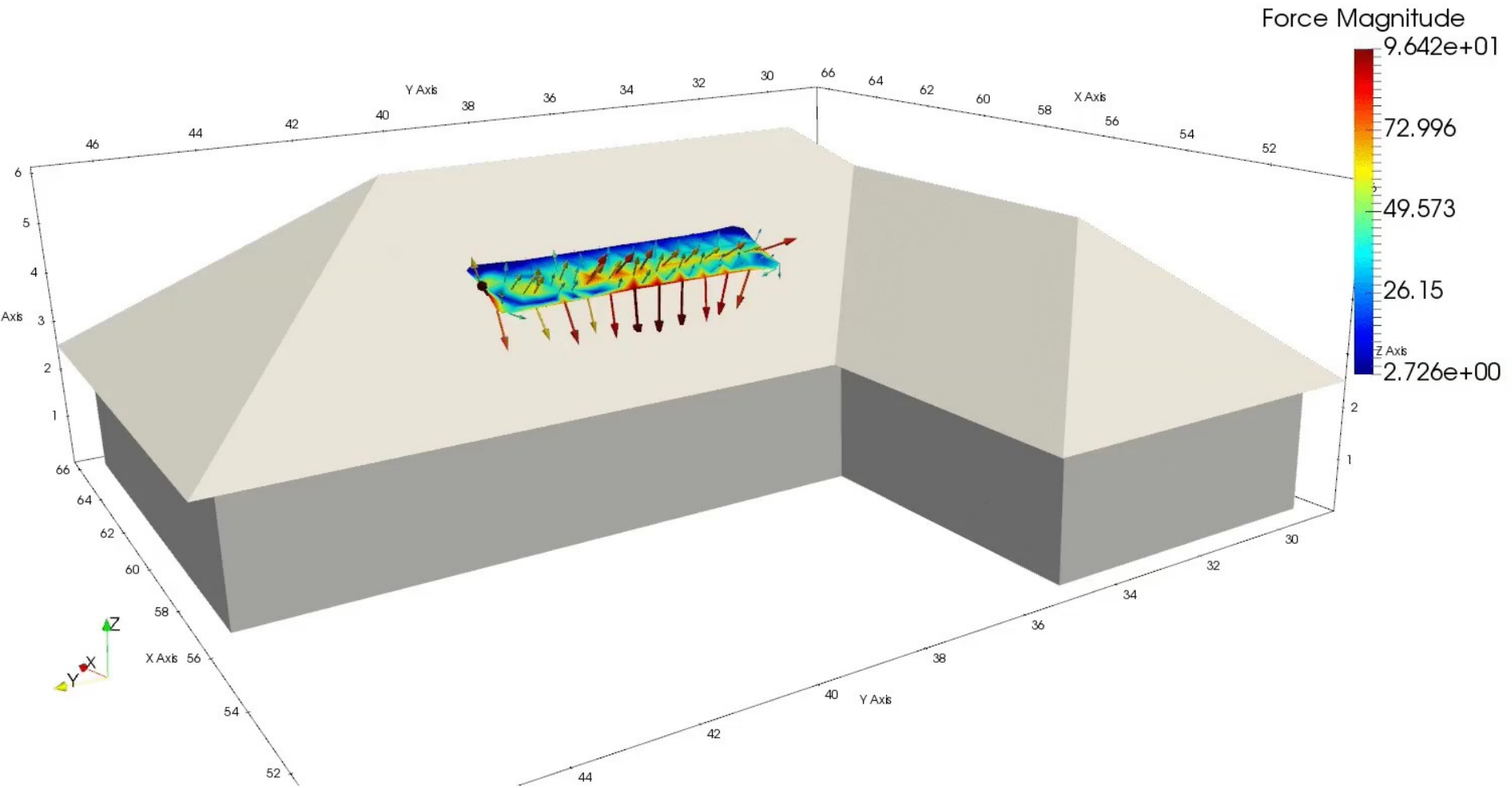
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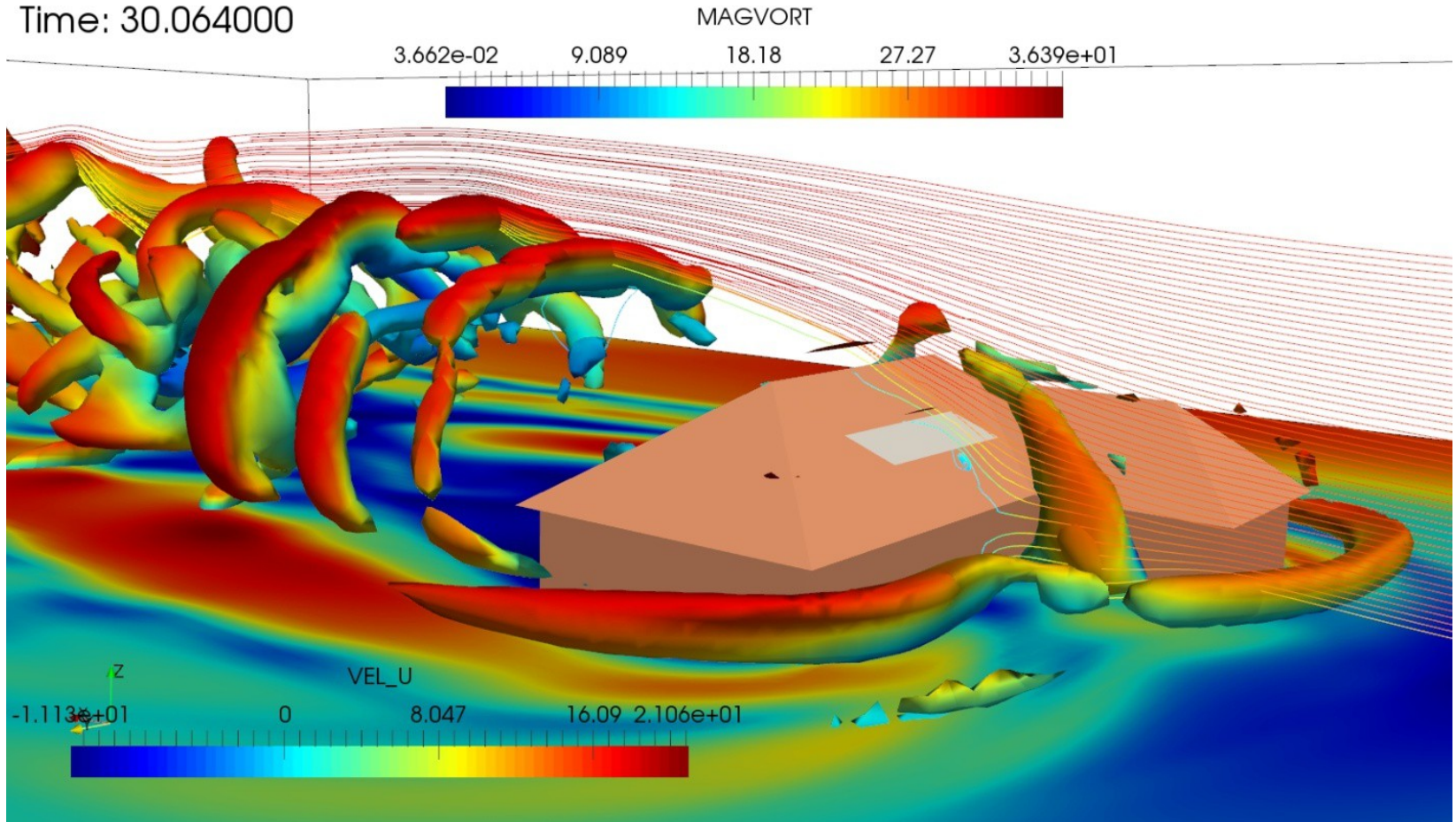
MAGVORT

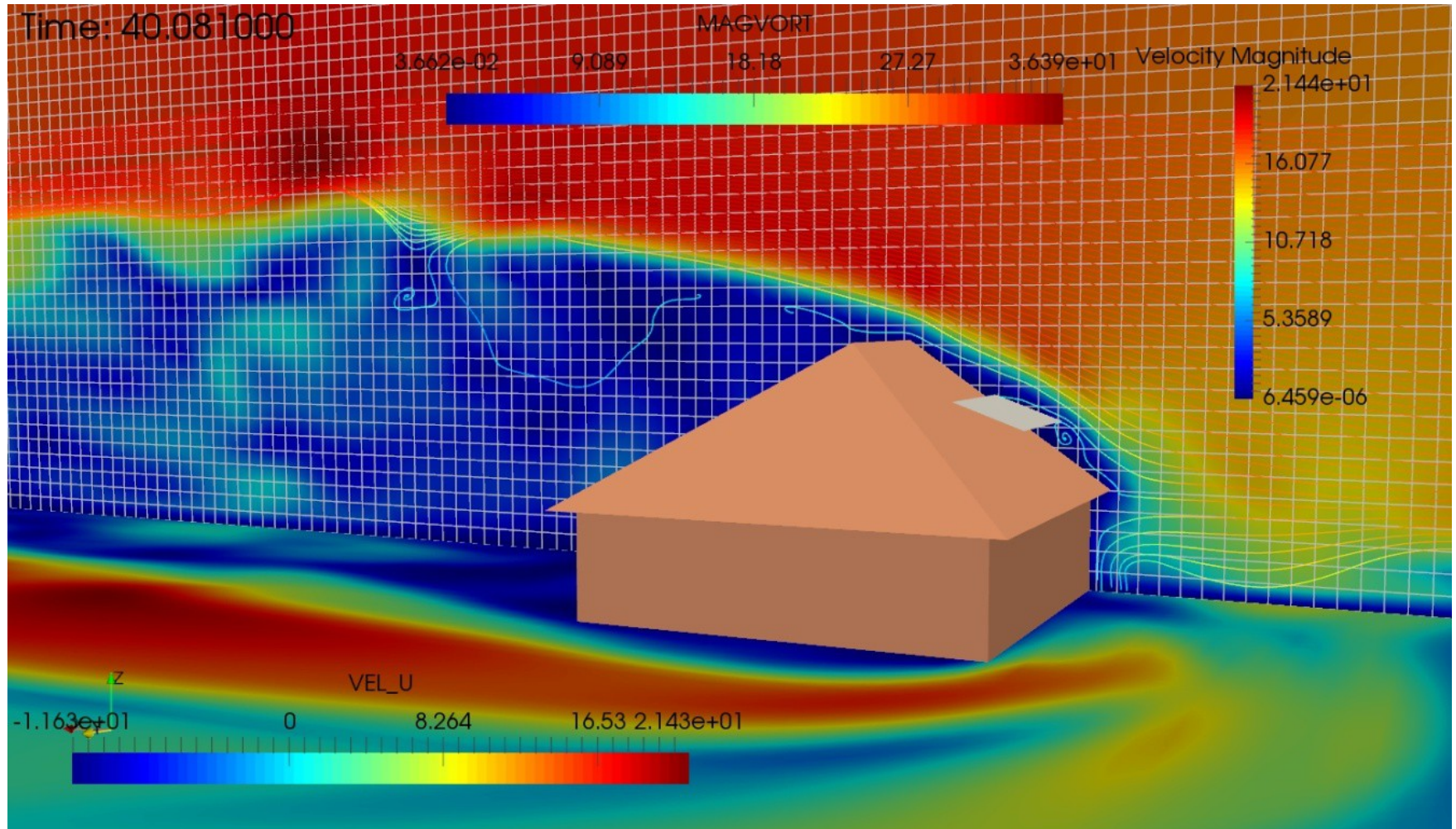
3.715e+01
27.862
18.575
9.2883
1.227e-03





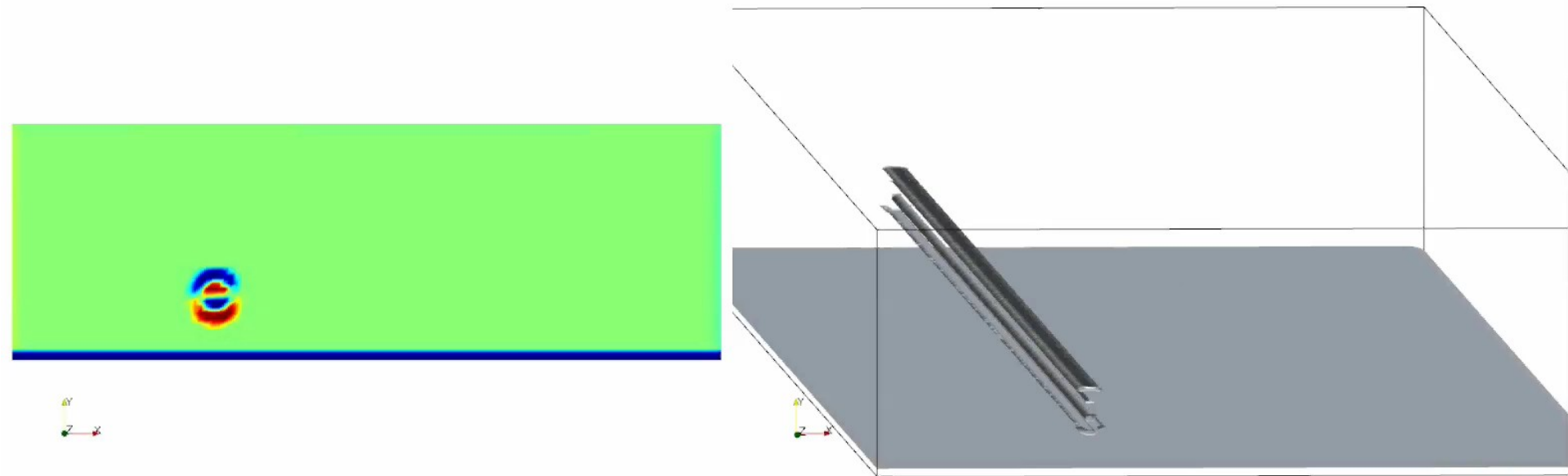
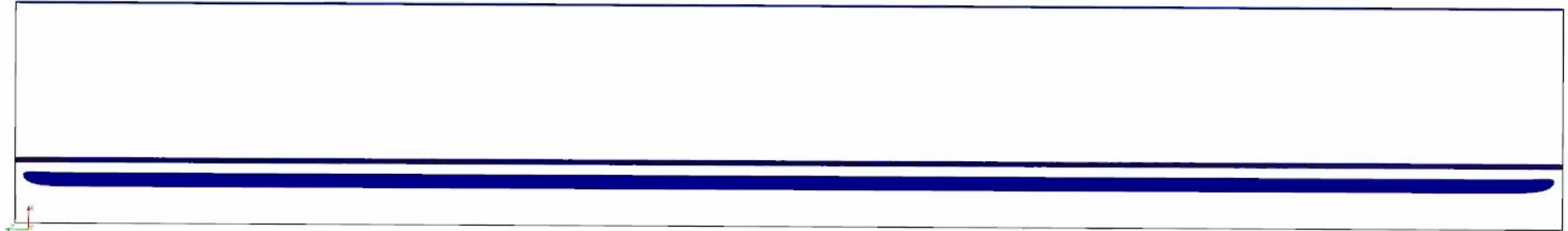
Time: 30.064000



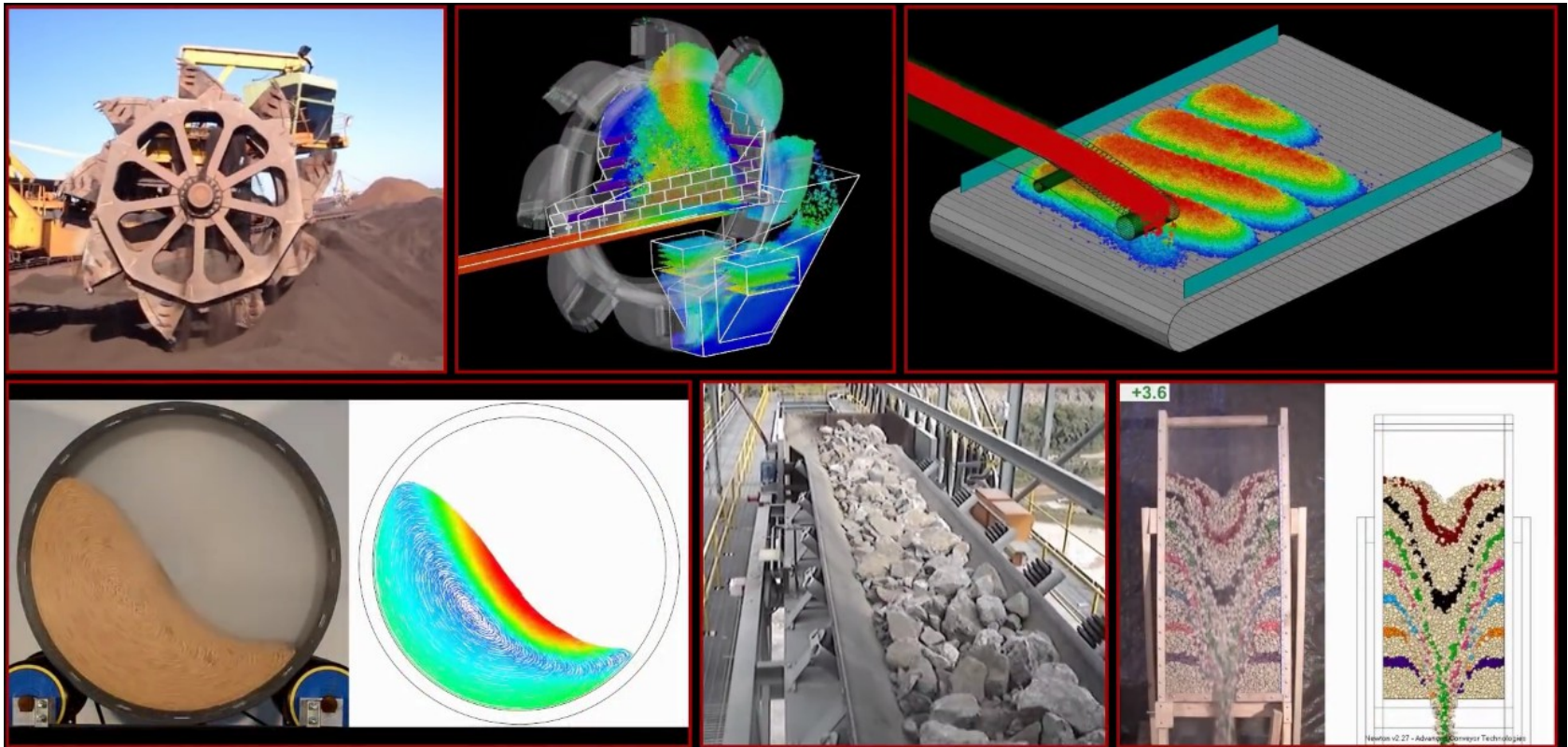


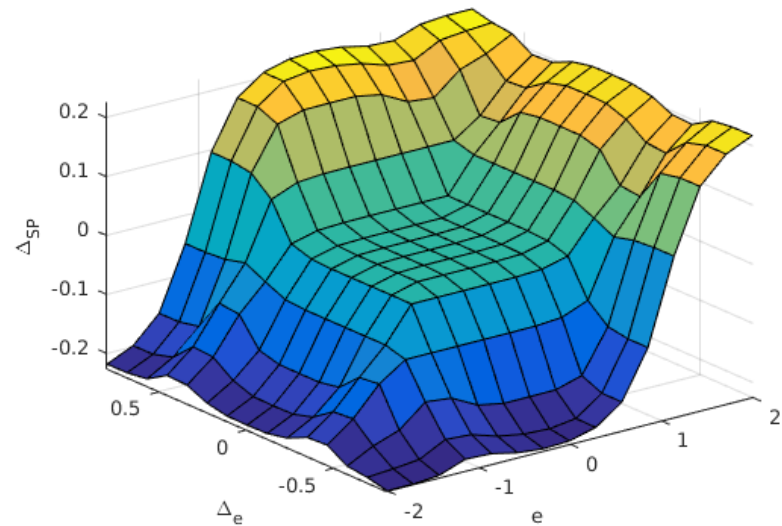
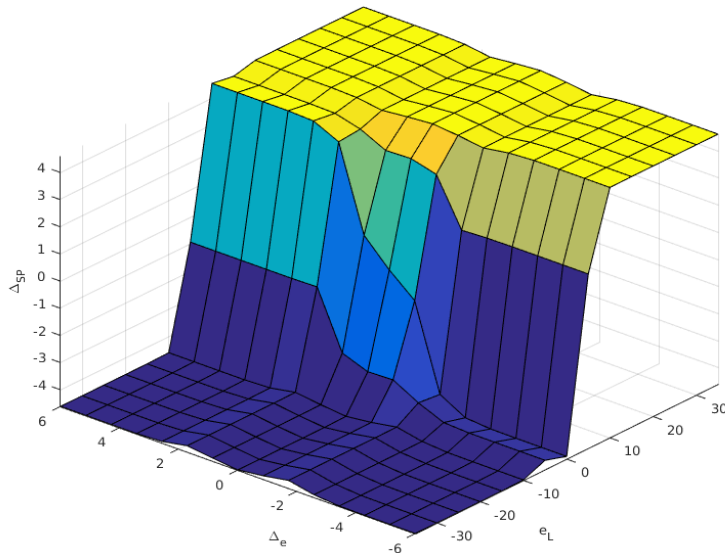
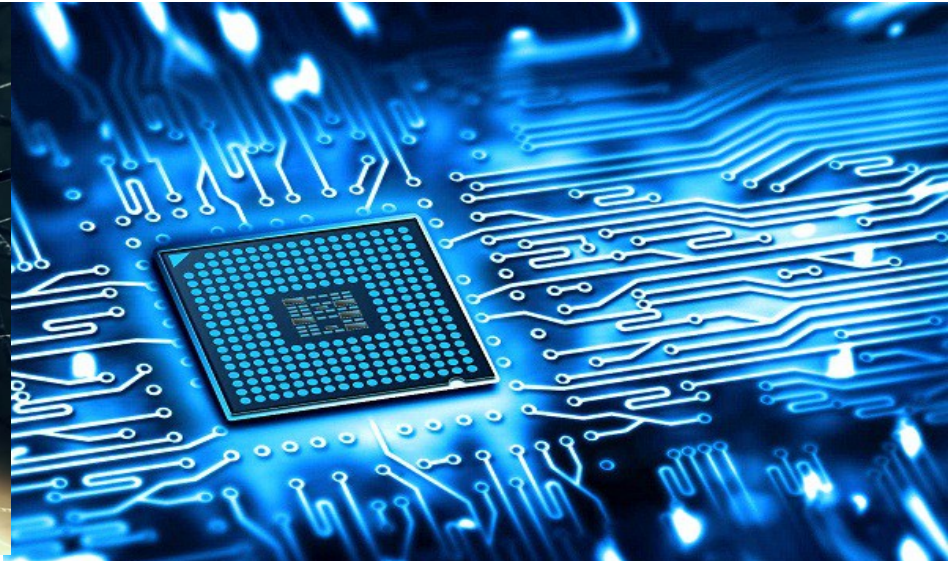
Fluido Estrutura – Riser

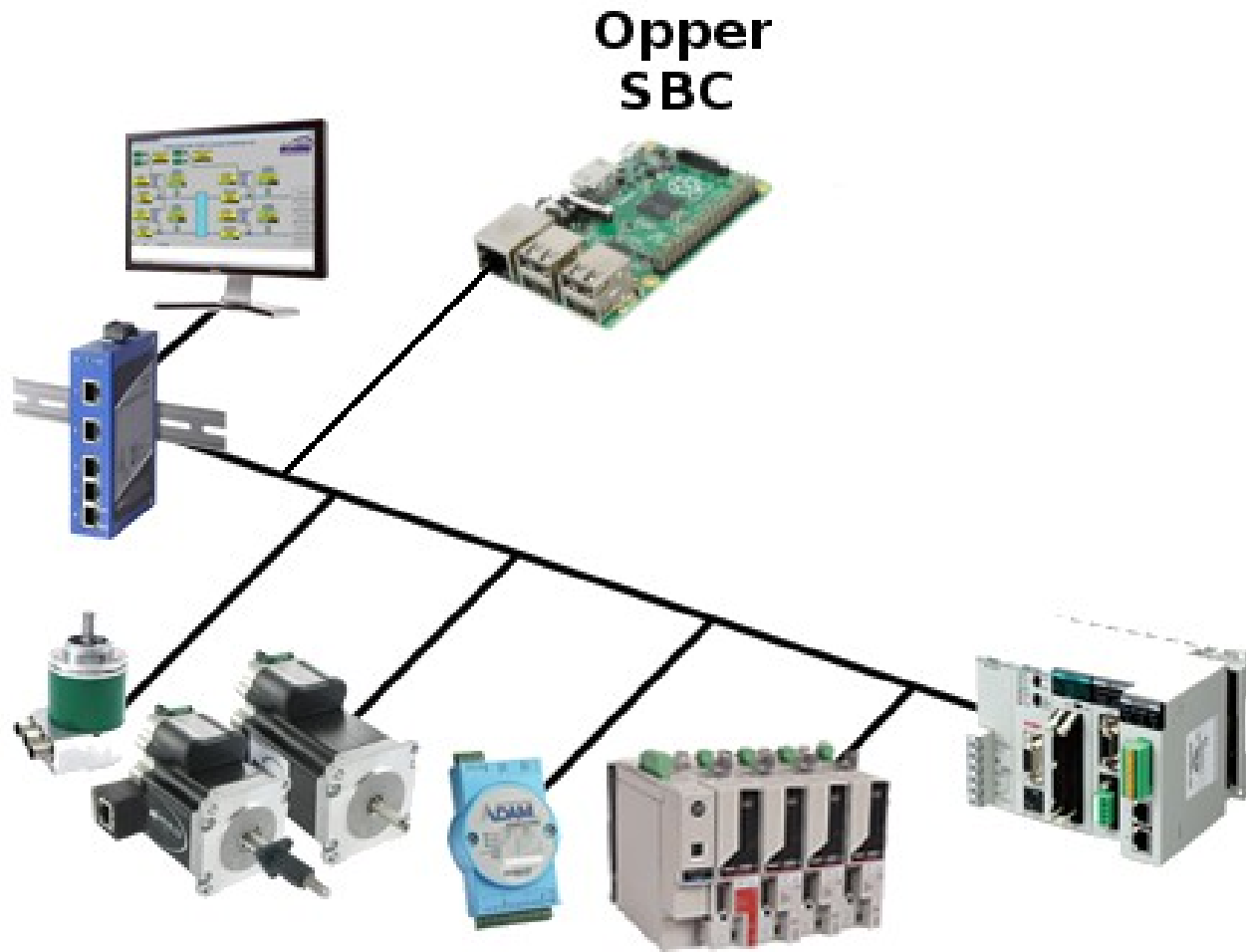
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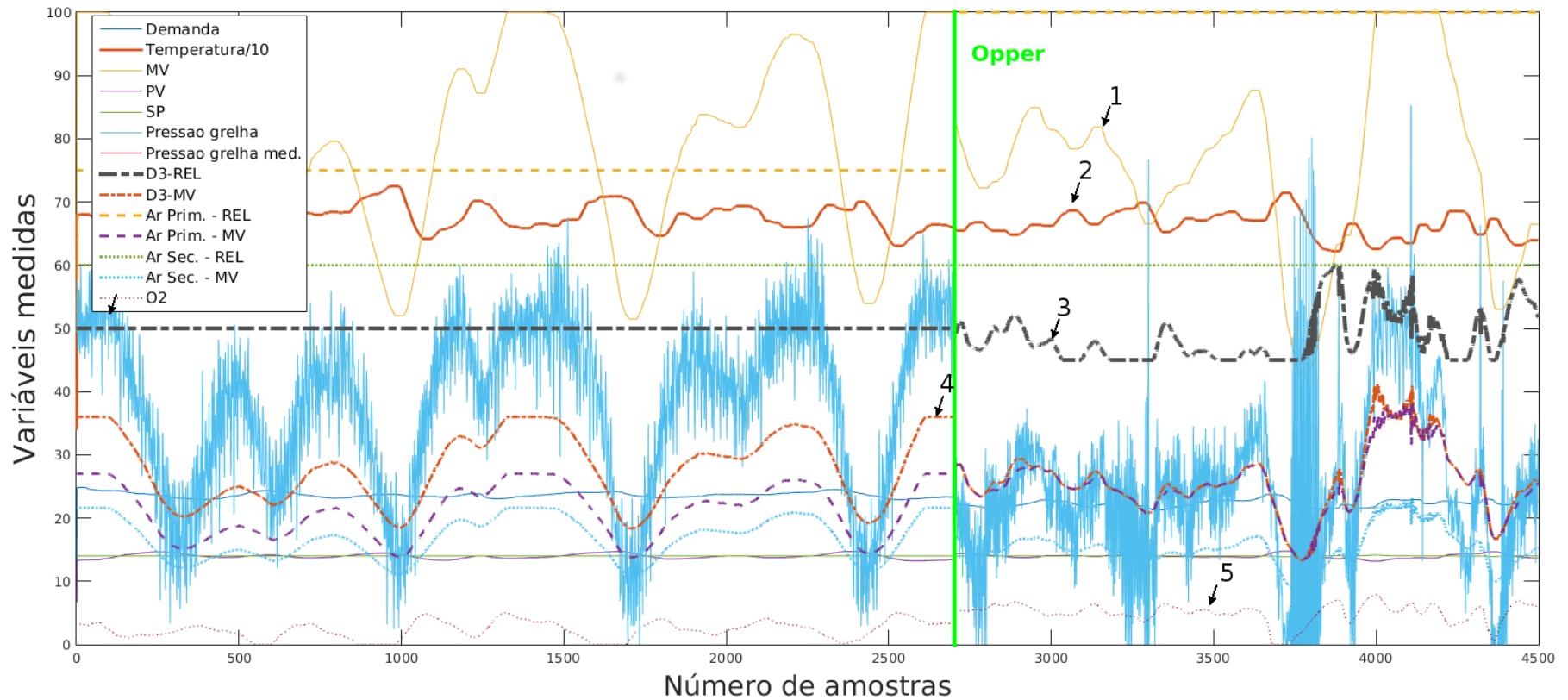


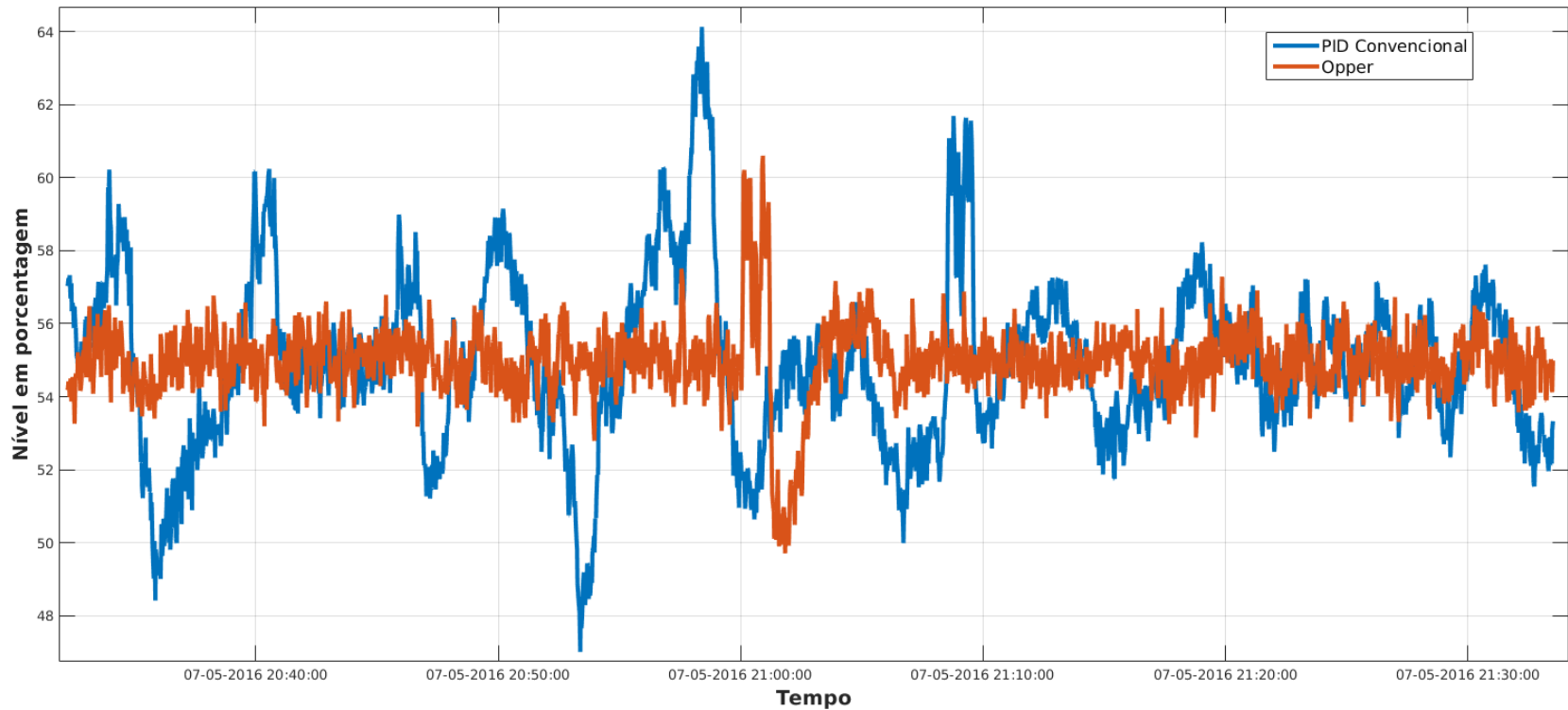
Mineração – simulação de processos

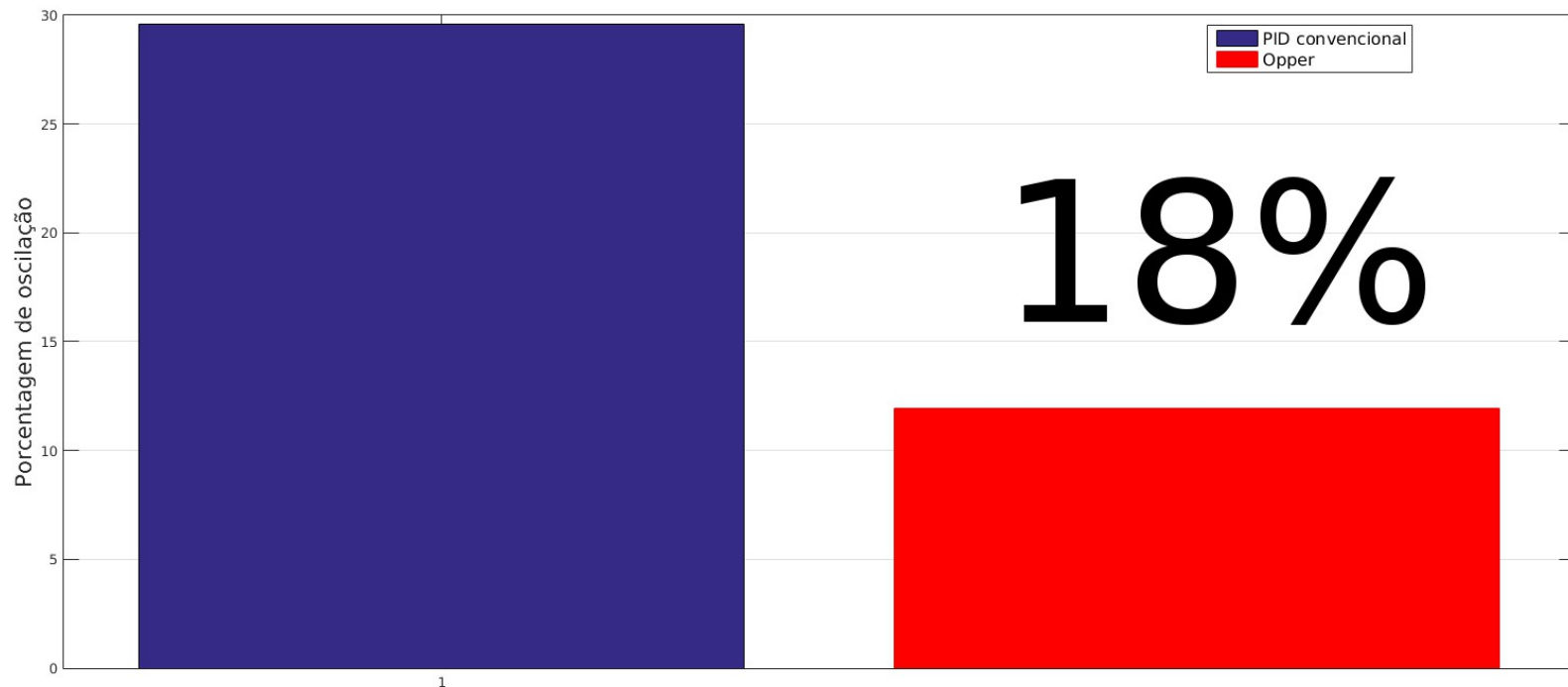


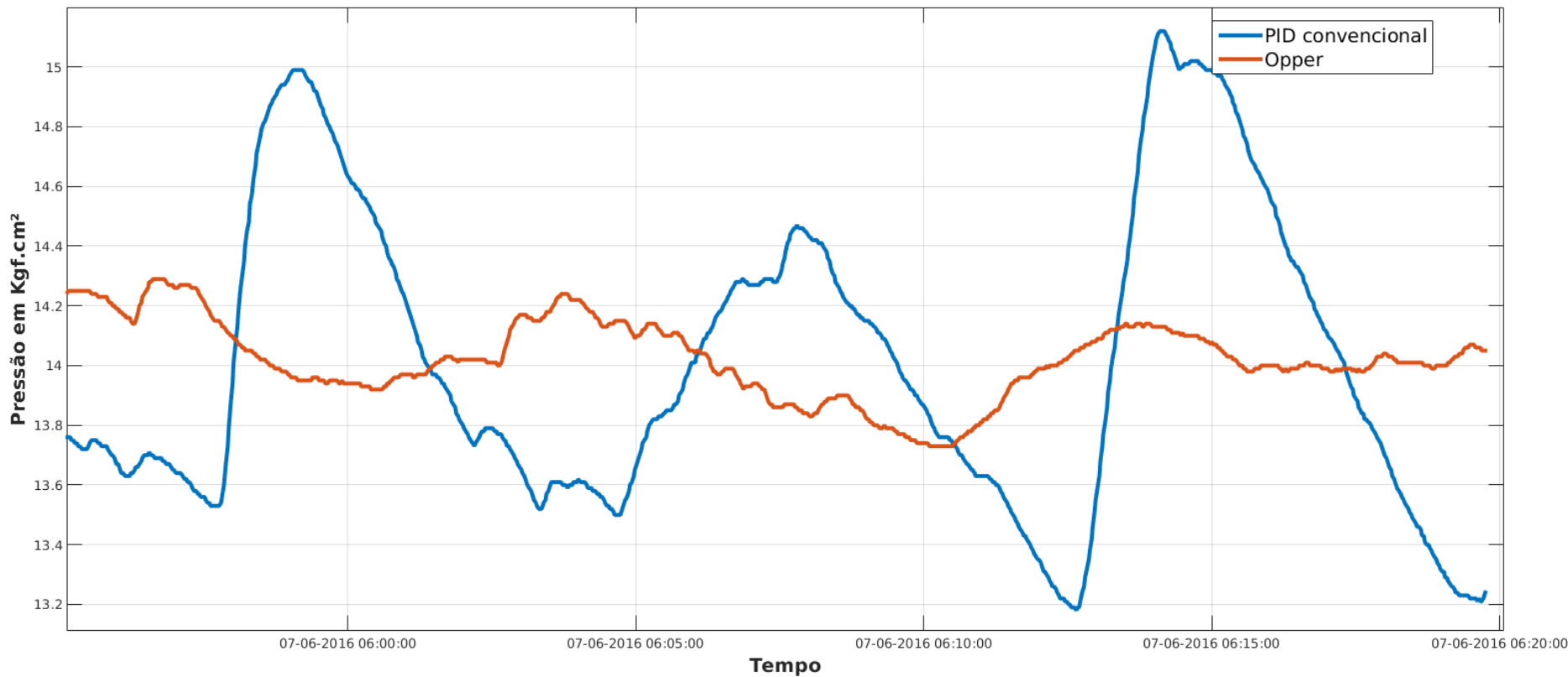


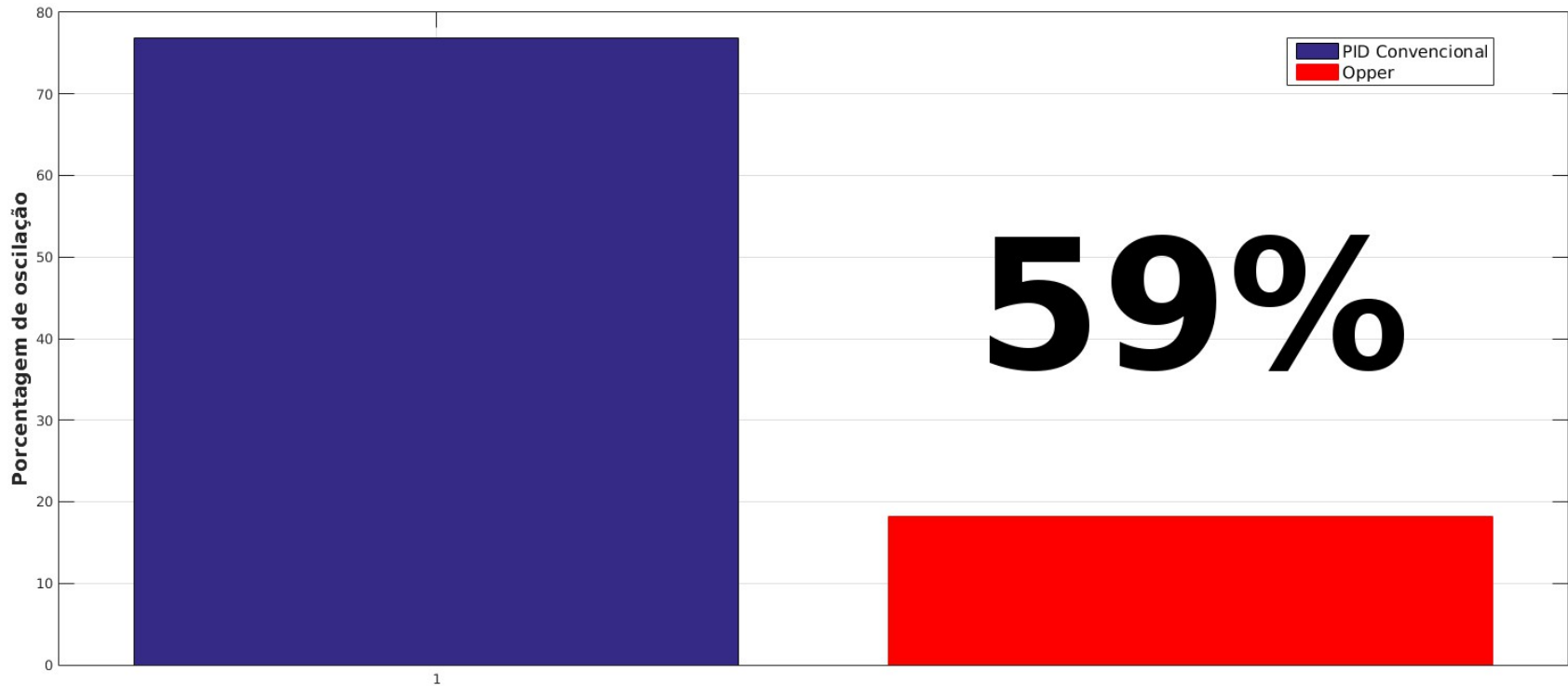


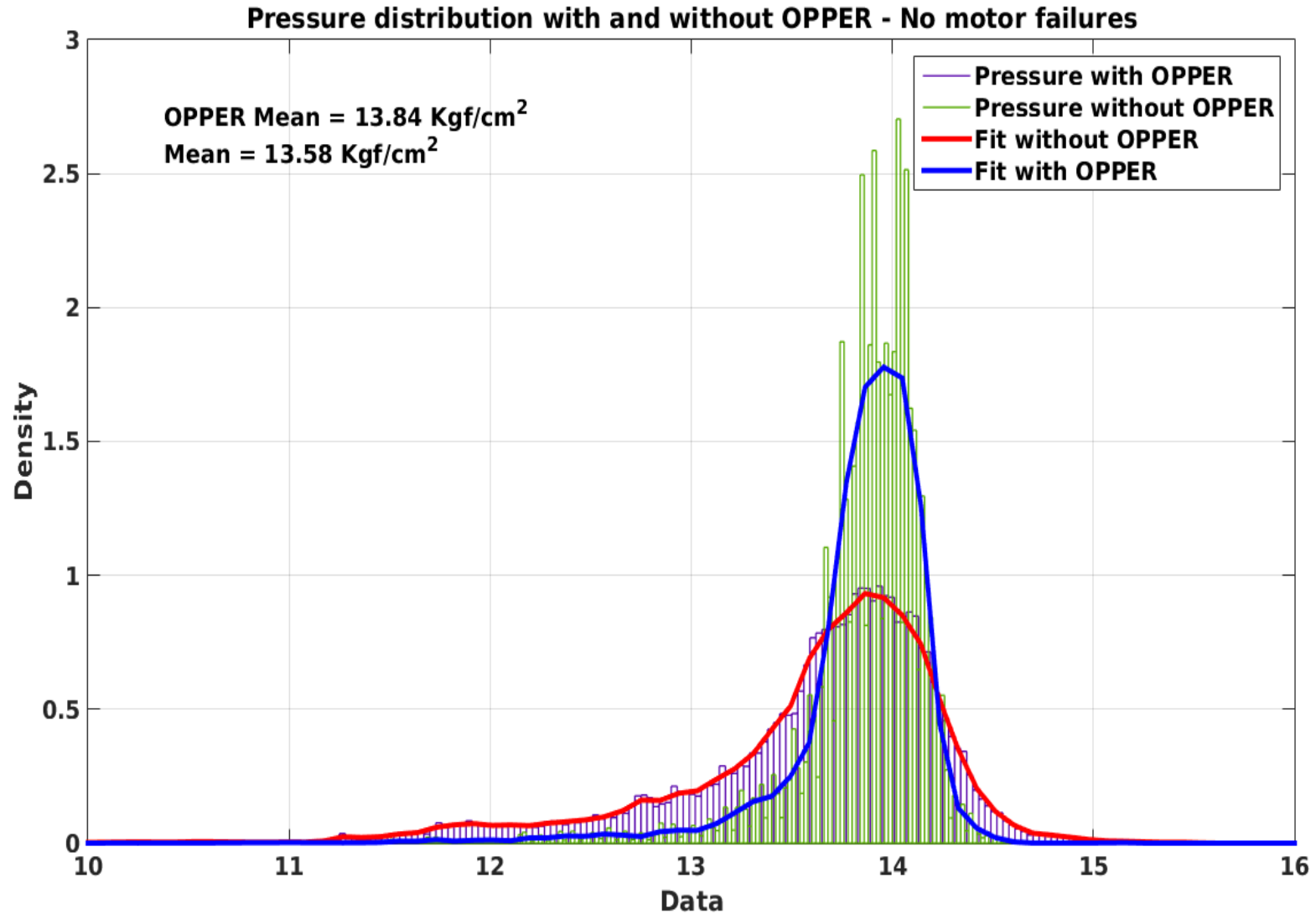




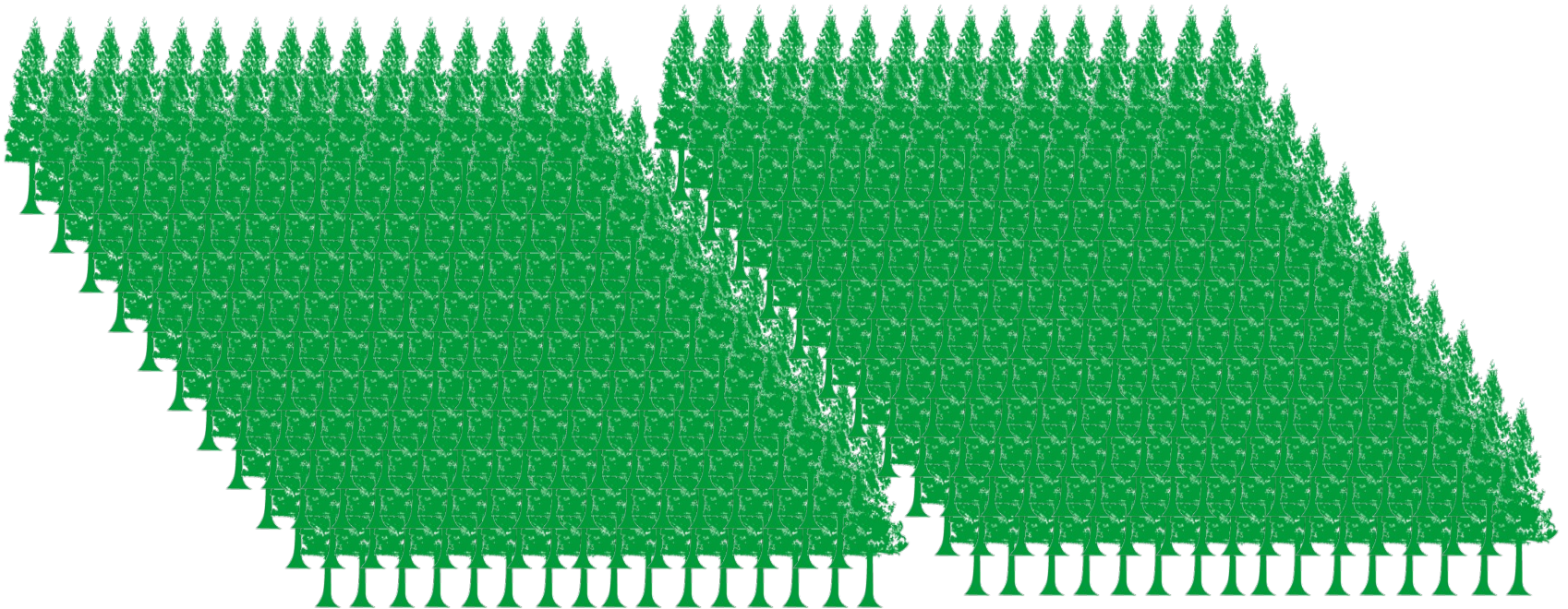








- 223 toneladas de cavaco:
 - 1 árvore tem em média de 0,125-0,175 toneladas de massa útil;
 - 223 toneladas = 1486 árvores;





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