



ICMGP 2024
CAPE TOWN • SOUTH AFRICA • 21 - 26 JULY

Raiane da Cruz

Mercury emissions coal from tests
in combustion pilot plant



Introduction

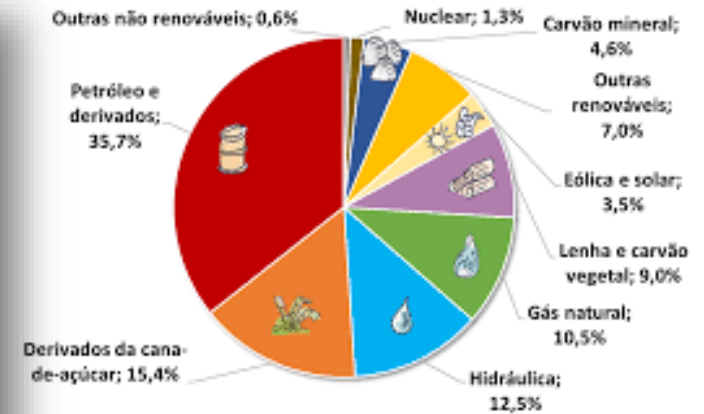


South Brazil

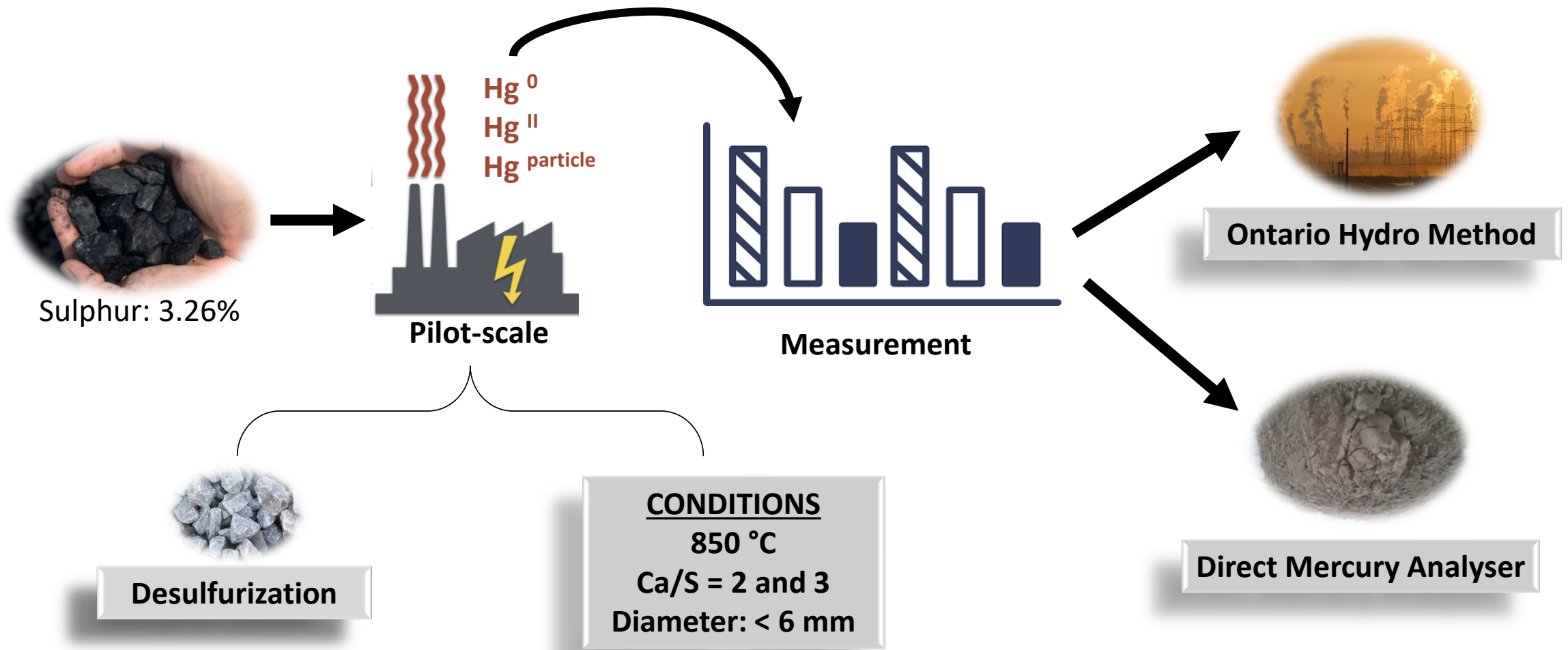


High ashes (23 at 55 %)
High sulfur (1.3 at 3.26 %)
LHV (3,100 at 6,200 kcal/kg)

EGU's



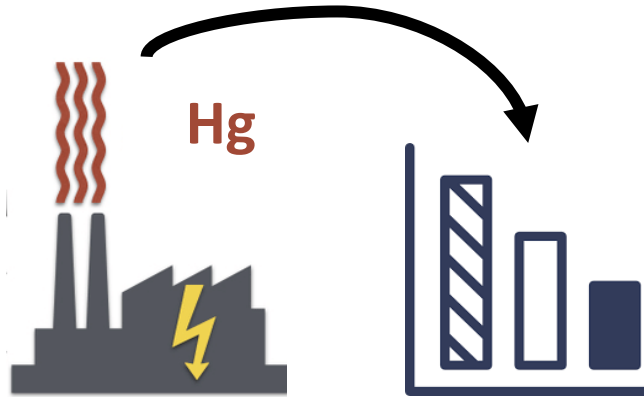
Methods



Methods

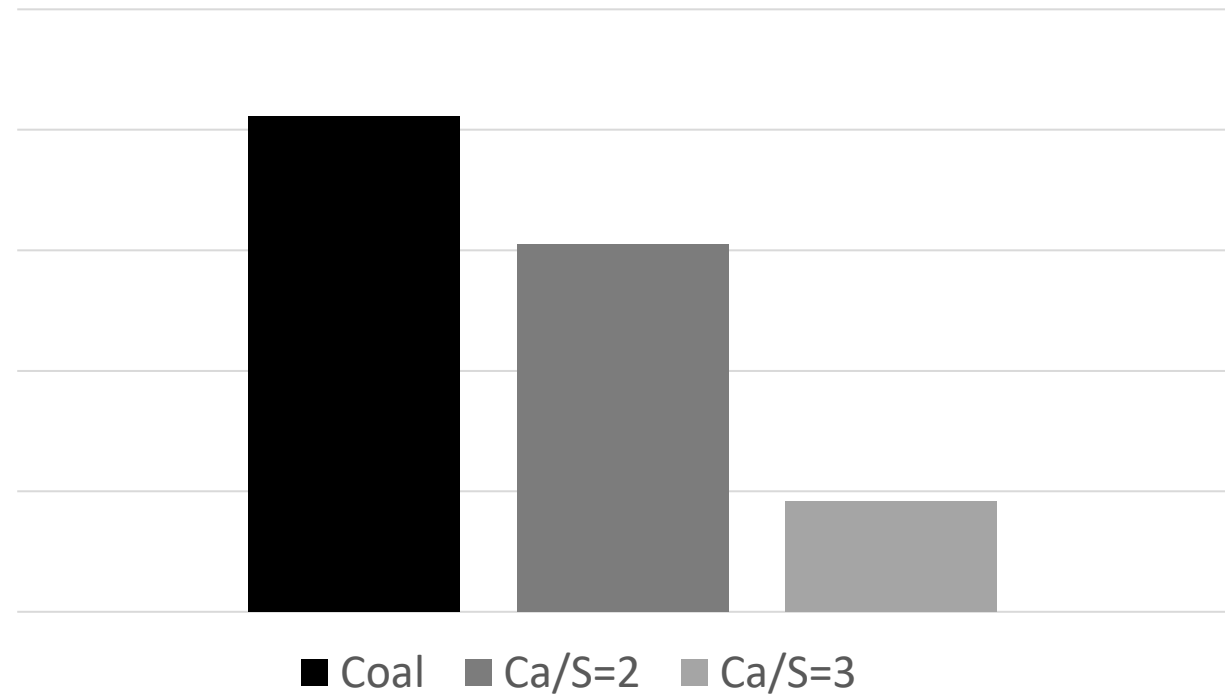


Results

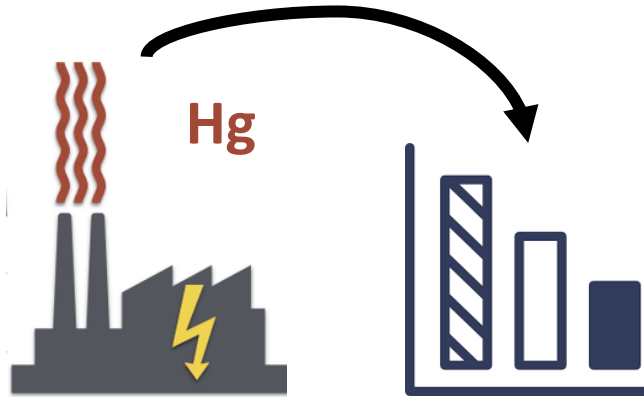


	$\mu\text{g}/\text{Nm}^3$
Coal	8.217
Ca/S=2	6.101
Ca/S=3	1.840

Atmospheric emissions

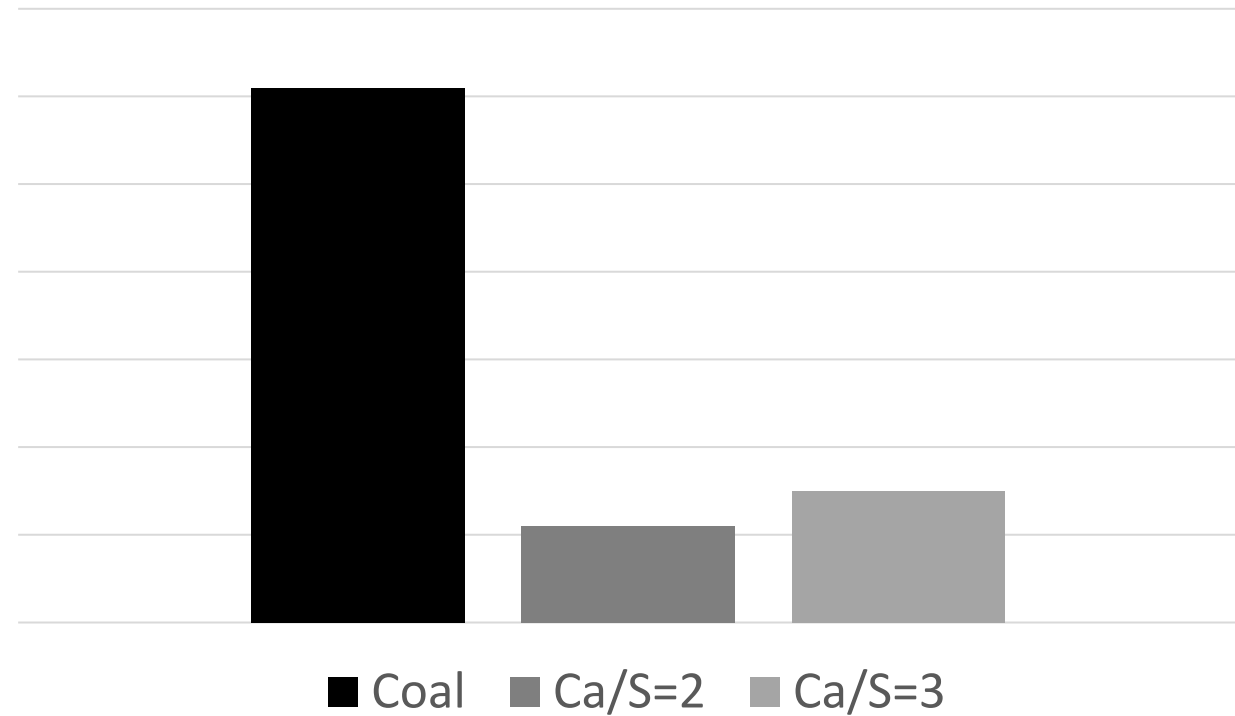


Results

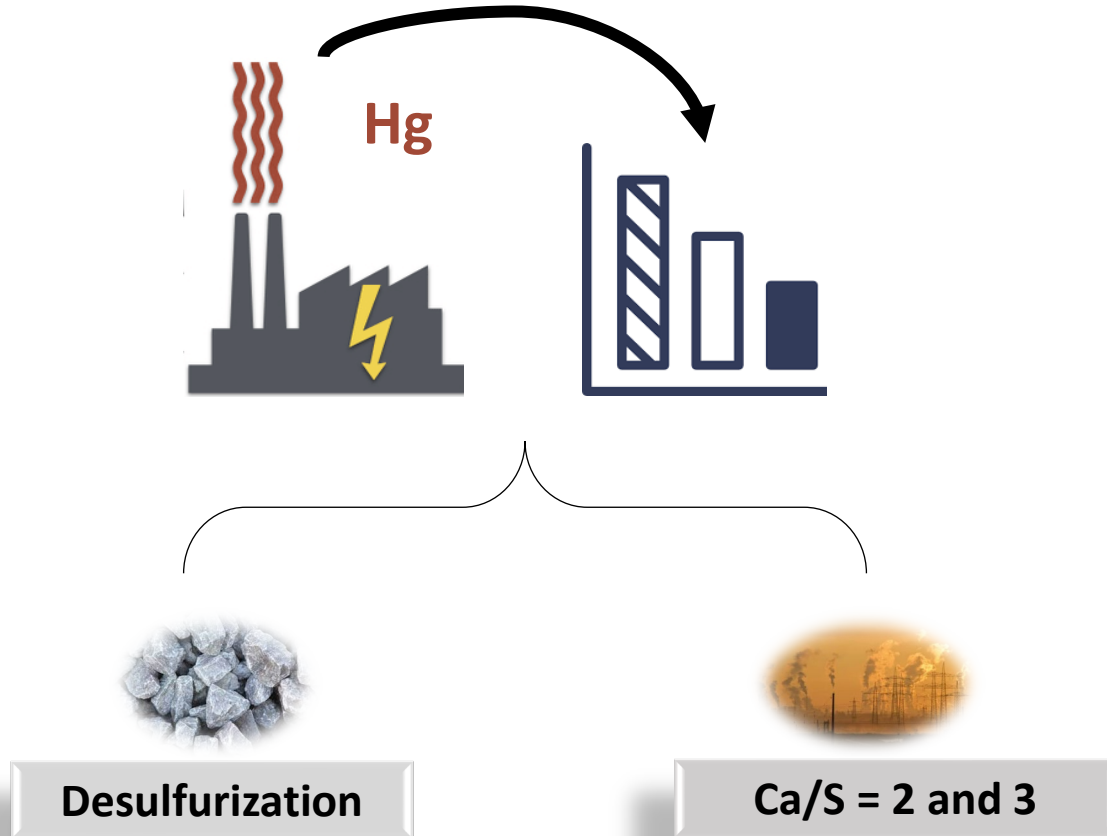


	mg/kg
Coal	0.122
Ca/S=2	0.022
Ca/S=3	0.030

Fly Ashes



Conclusions



The desulfurization process helps with mercury emissions

The **Ca/S=3** ratio is the best ratio to work with for two reasons:

1 - Mercury emissions decreased by **77%** compared to coal combustion;

2 - Sulfur emissions were below the limit established by Brazilian standards, which are **3,000 mg/Nm³**

The **fly ashes** analyzed had the same behavior as atmospheric emissions, reducing when limestone was inserted.

The **bottom ashes** was analyzed but non-detect in the equipment (DMA), indicating low values.

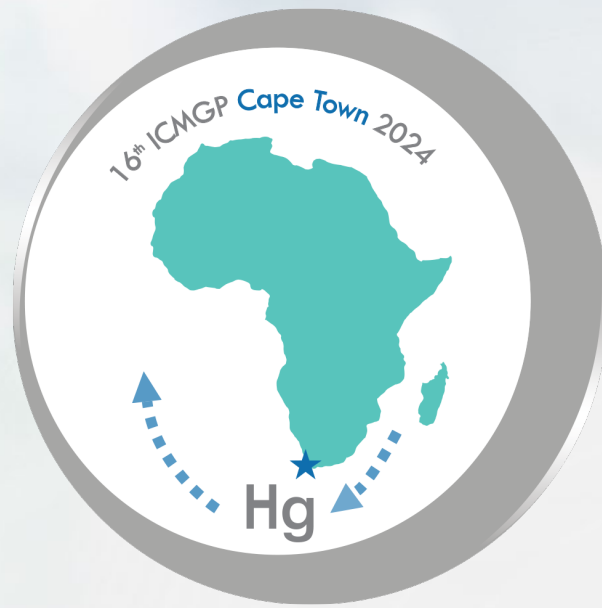


Acknowledgements



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Q&A

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