Solving PDE
Report

Zala Stopar Špringer

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Contents

1 $x \in [0, 100], hx = 5$ **and** $y \in [-50, 50], hy = 1$
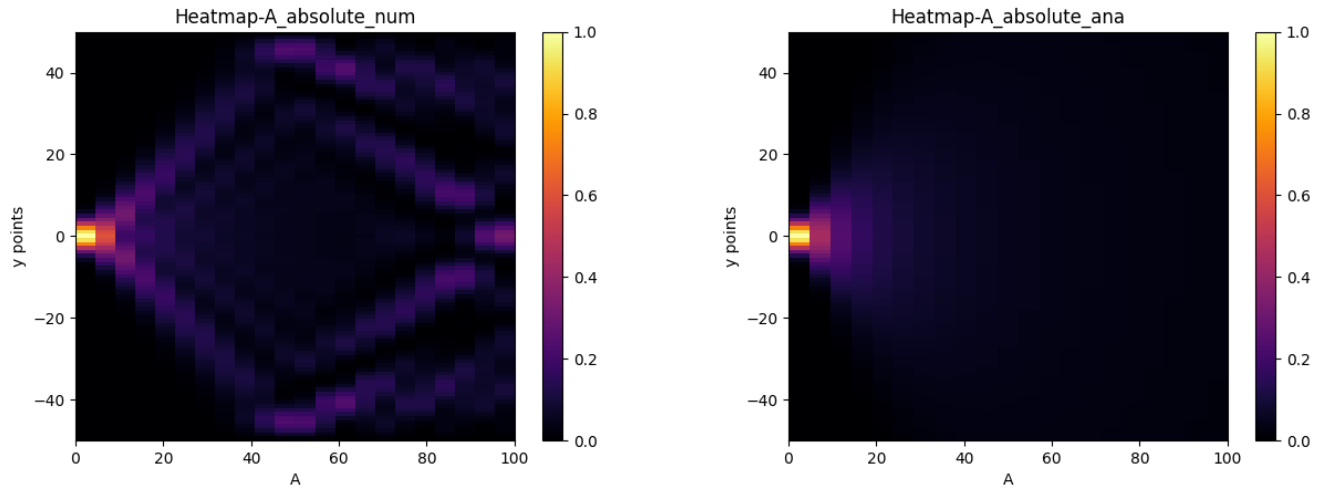
1.1 Heatmap

Figure 1: Heatmap for numerical and analytical solution
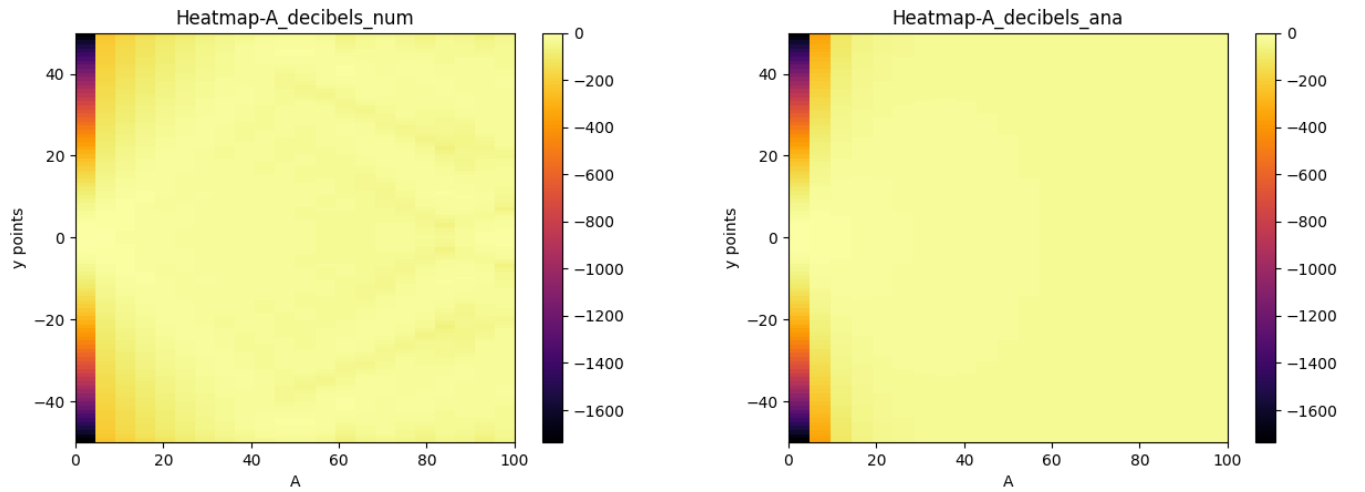

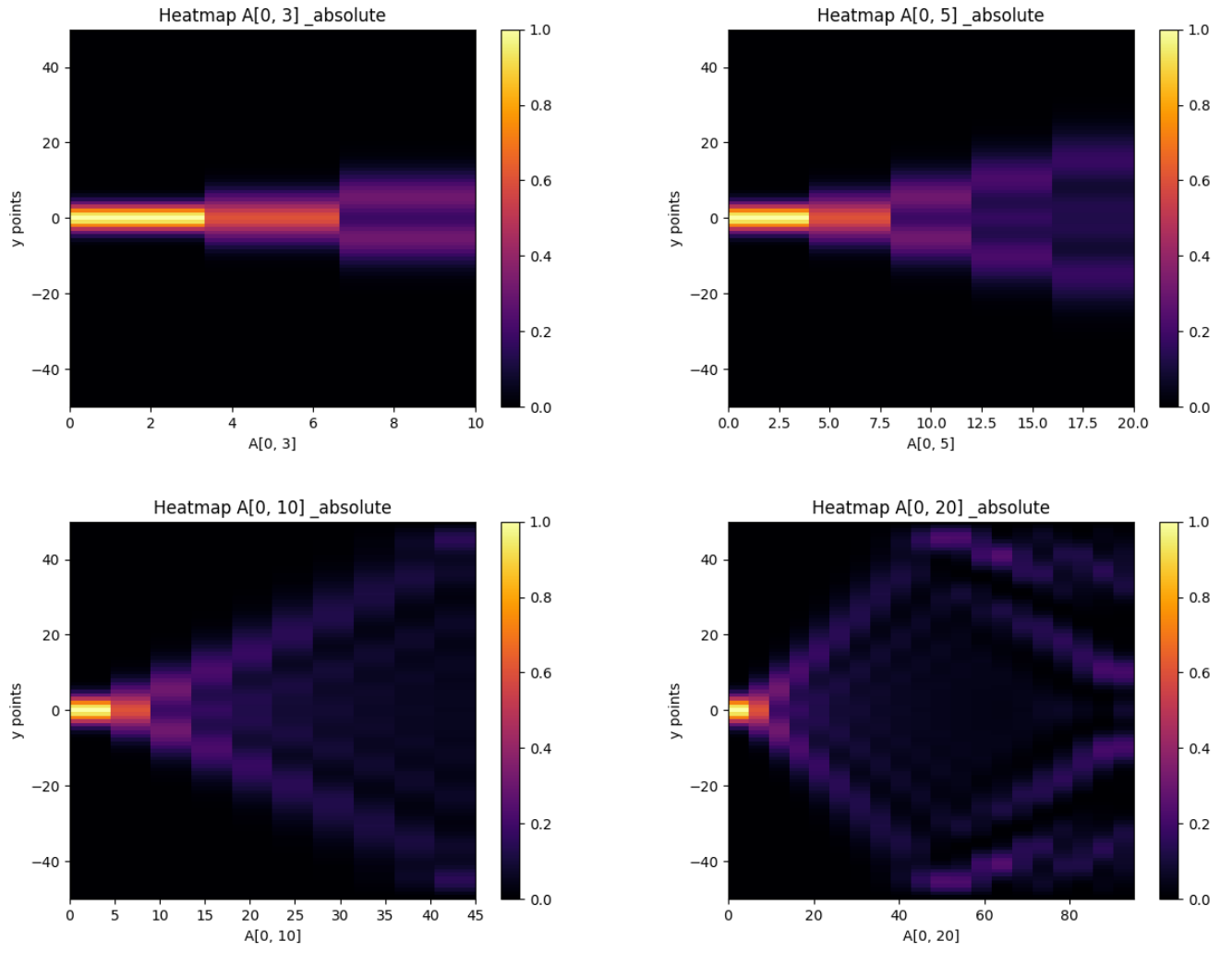Figure 2: Heatmap for numerical and analytical solution in decibels

Figure 3: Heatmap for first n y numerically calculated
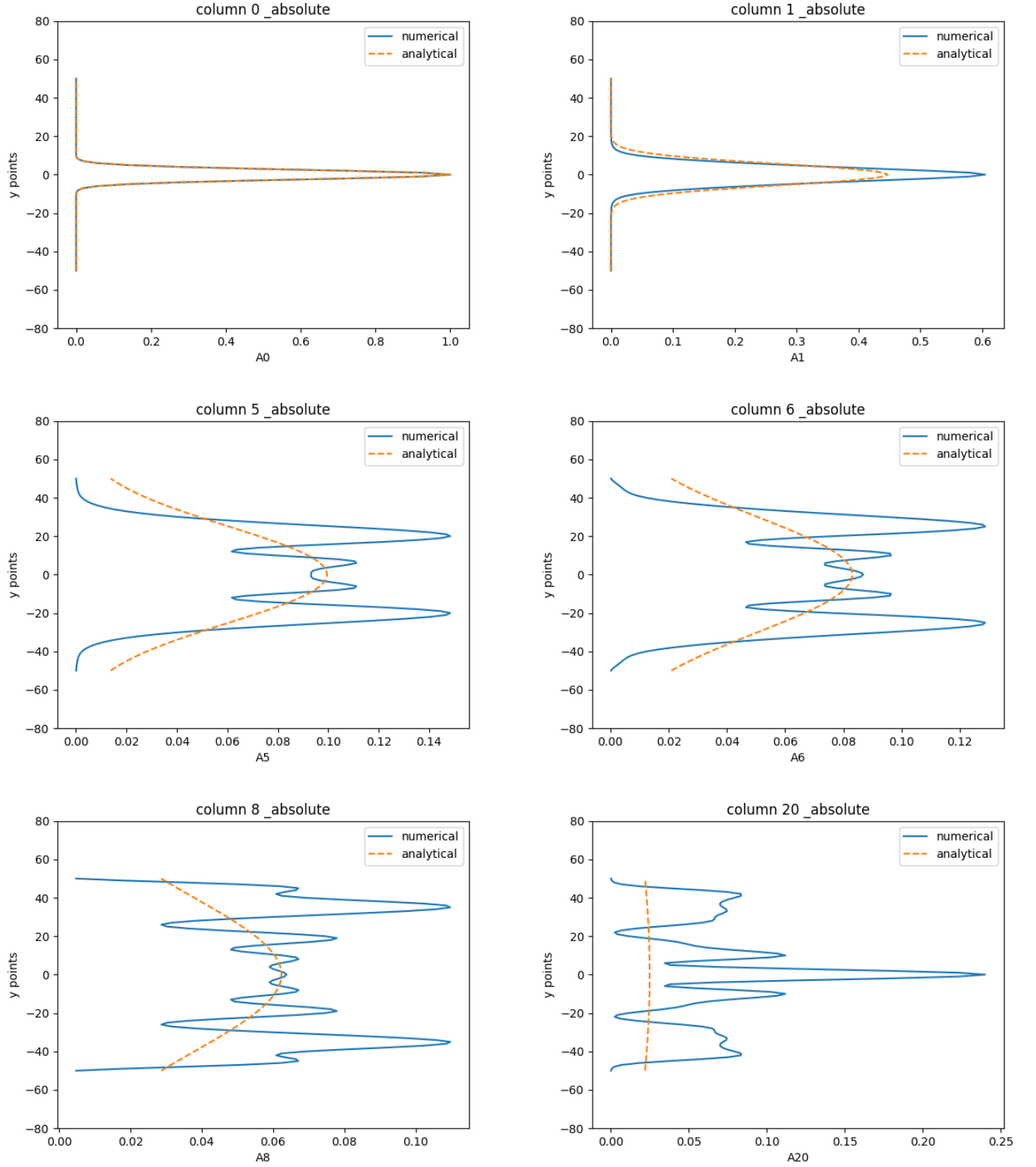
1.2 Compare numerical and analytical

Figure 4: x-th column of matrix A (numerical) and $\tilde{A}$ (analytical)
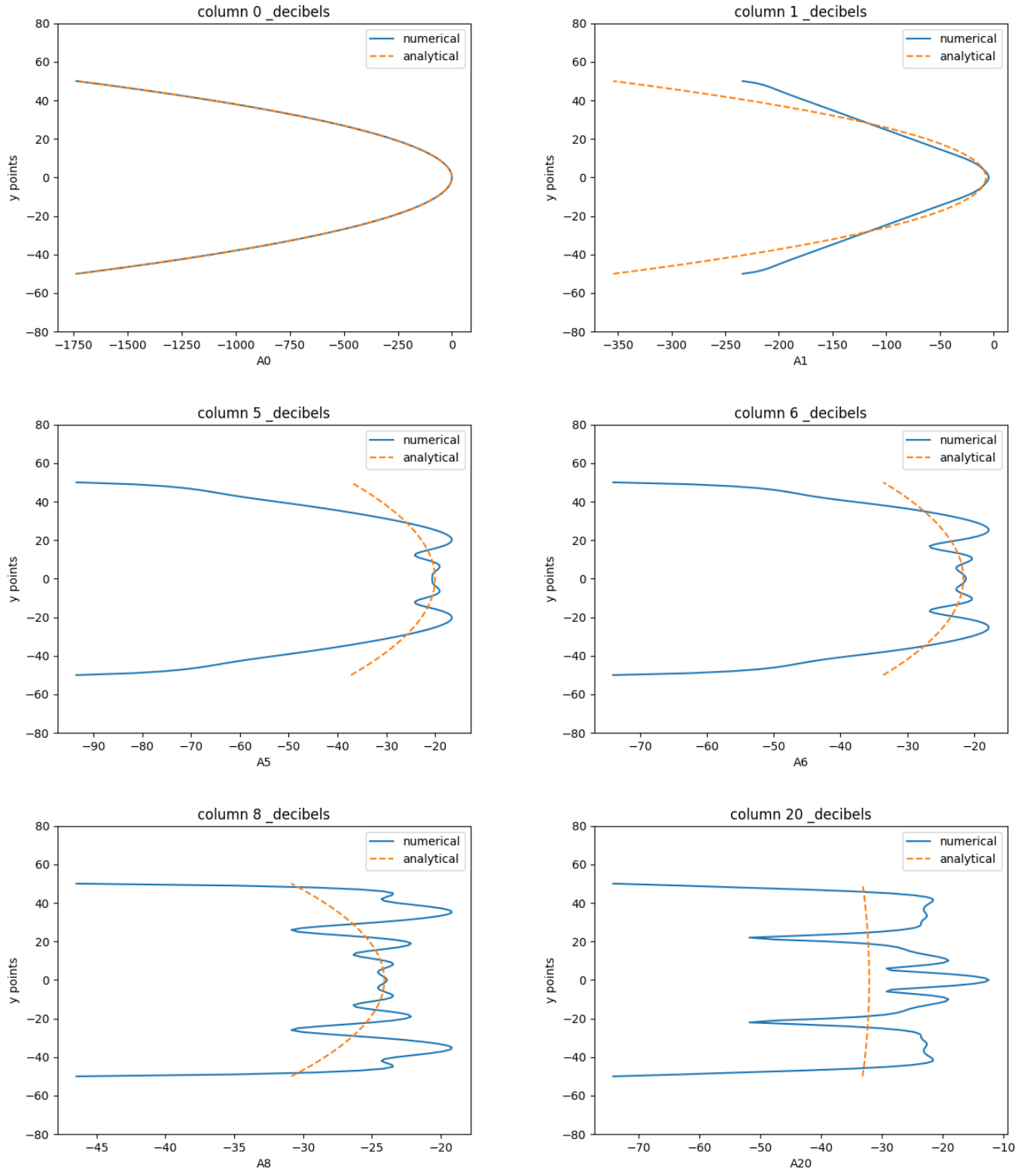
1.3 Compare numerical and analytical decibels

Figure 5: x-th column of matrix A (numerical) and $\tilde{A}$ (analytical) in decibels

2 $x \in [0, 1000], hx = 5$ **and** $y \in [-500, 500], hy = 1$
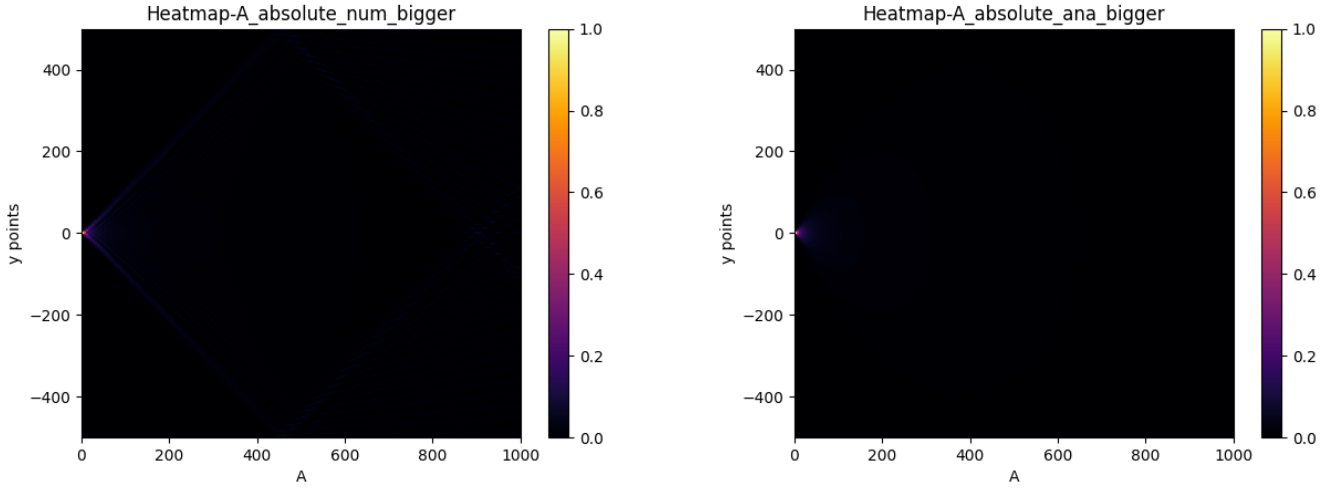
2.1 Heatmap

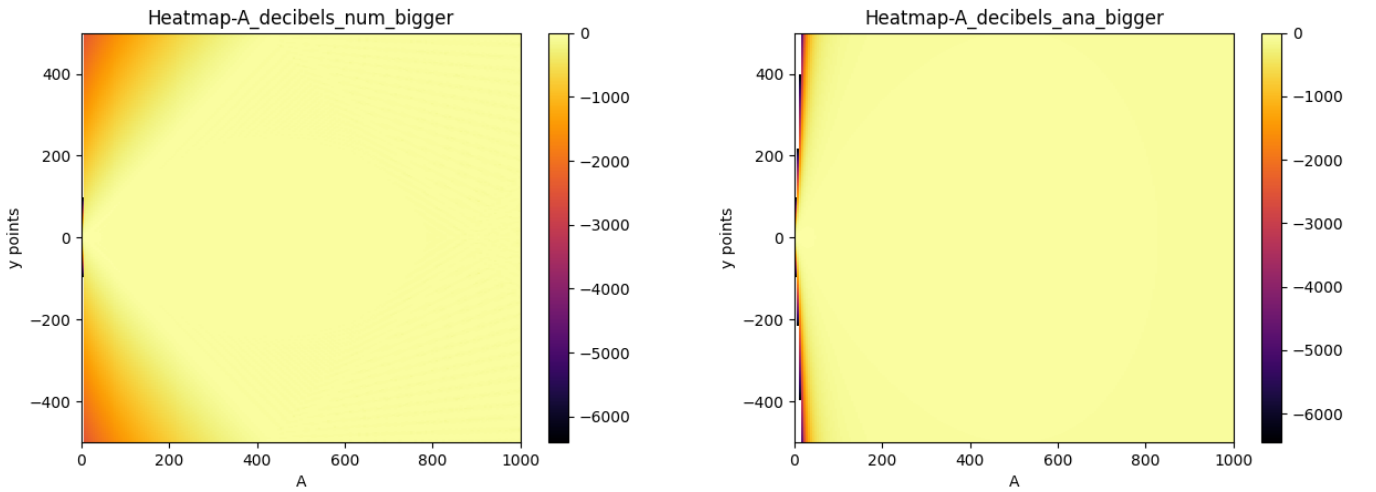Figure 6: Heatmap for numerical and analytical solution

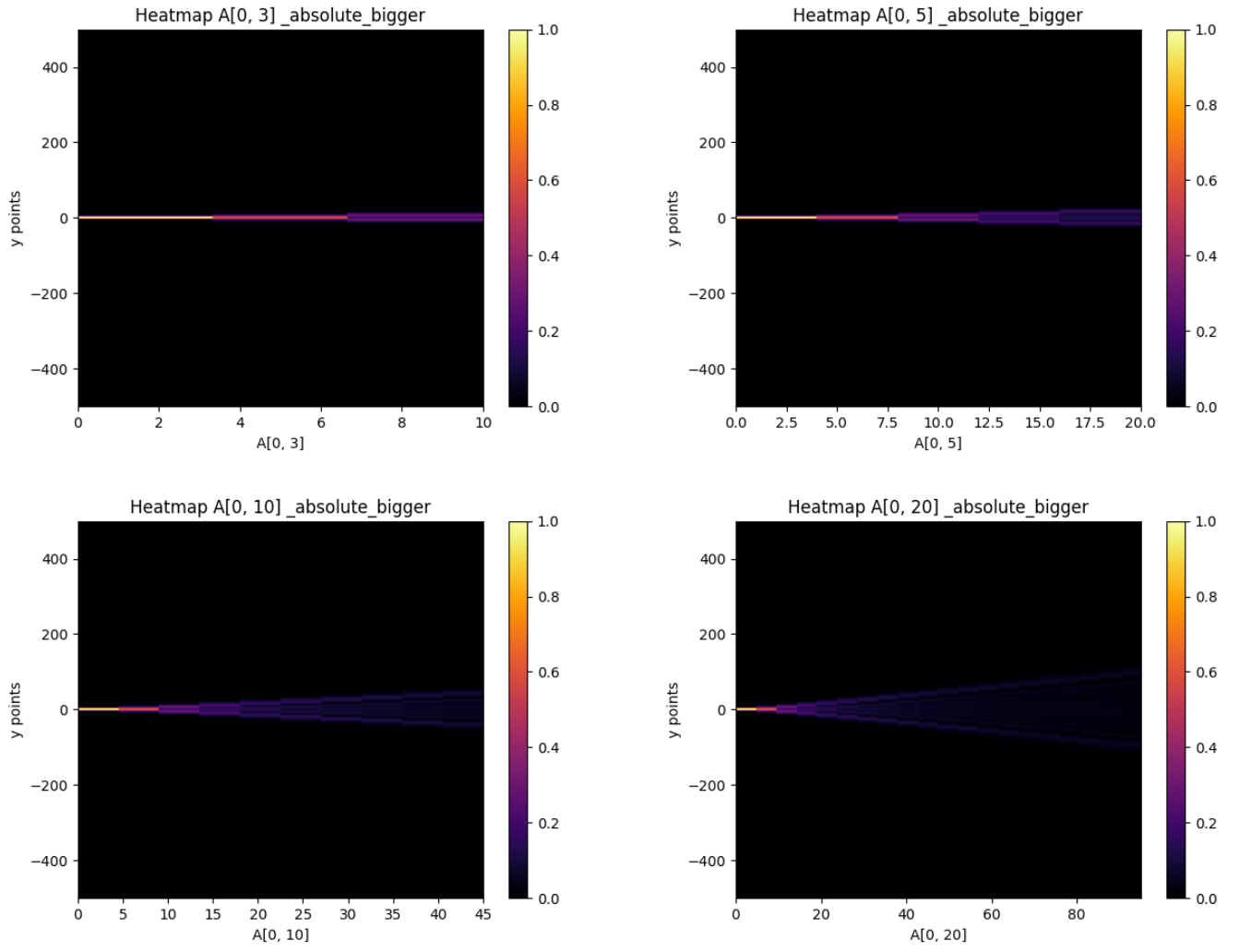Figure 7: Heatmap for numerical and analytical solution in decibels

Figure 8: Heatmap for first n y numerically calculated
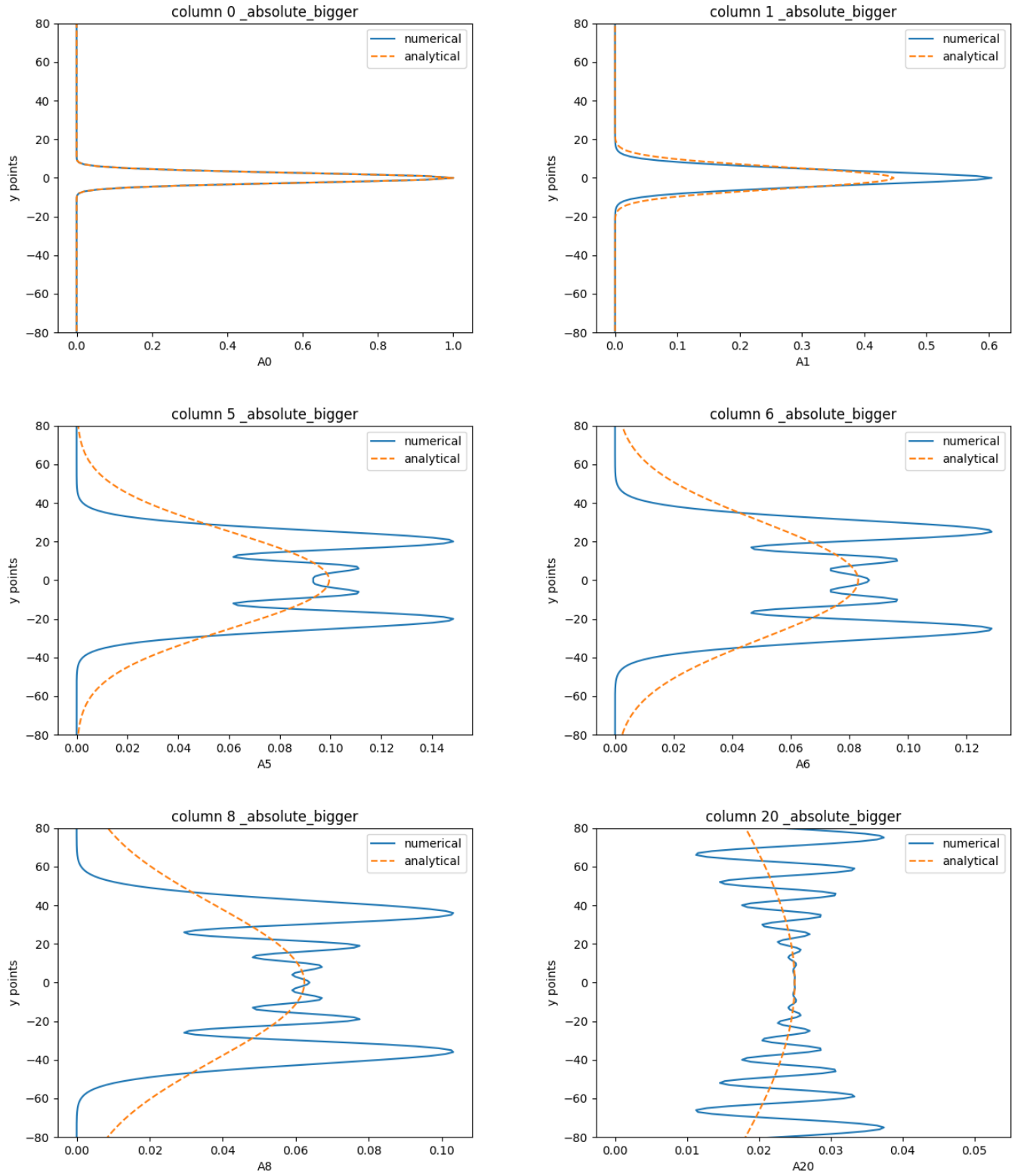
2.2 Compare numerical and analytical

Figure 9: x-th column of matrix A (numerical) and $\tilde{A}$ (analytical)

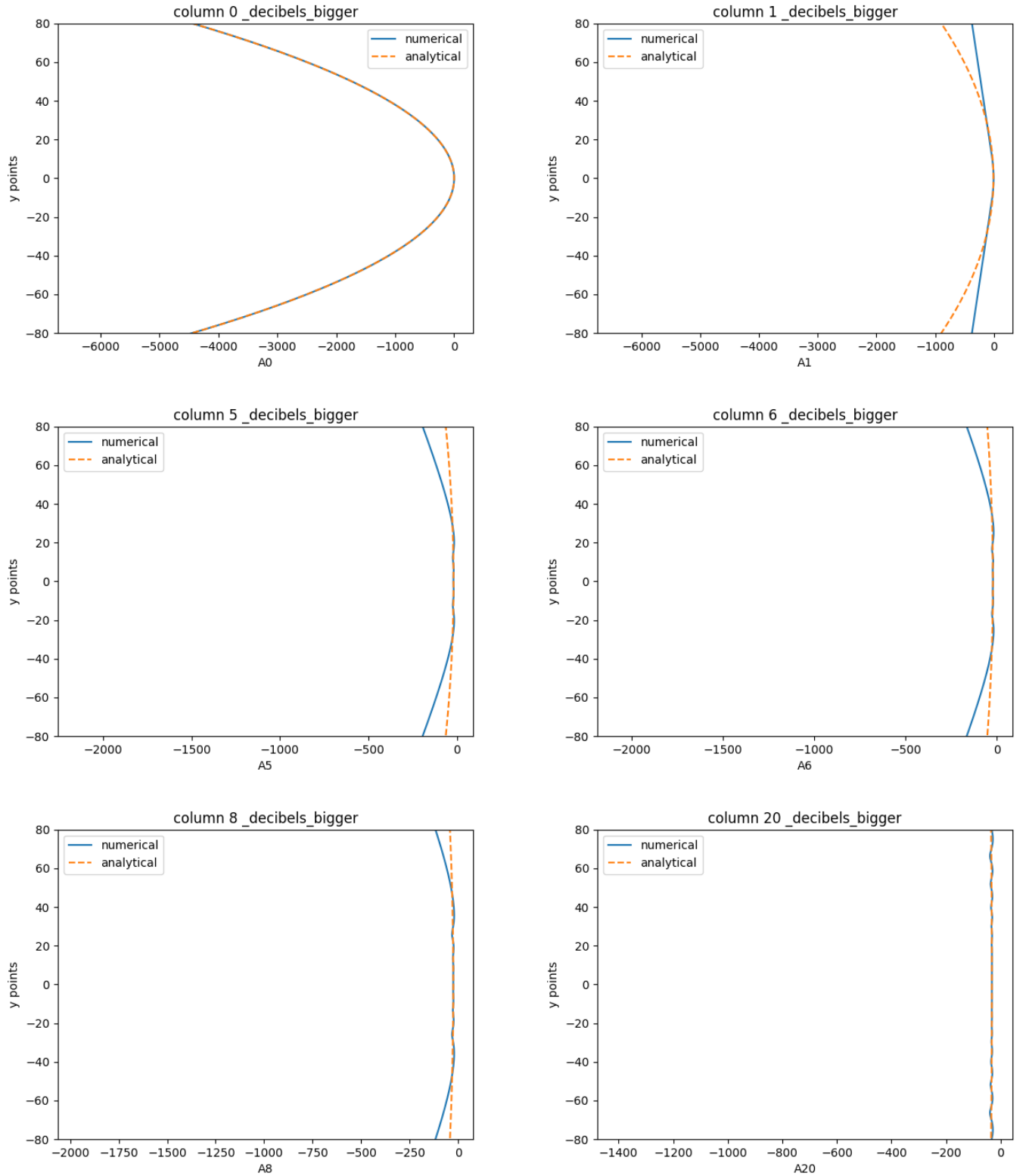## 2.3 Compare numerical and analytical decibels

Figure 10: x-th column of matrix A (numerical) and $\tilde{A}$ (analytical) in decibels