Erratum to: Boundary Nevanlinna–Pick interpolation via reduction and augmentation

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The proof of Proposition 6.7 $(1) \Rightarrow (5)$ is inaccurate, though the statement of the proposition is correct. The proof should be replaced by the following.

By Theorem 6.2, $(2) \Leftrightarrow (3) \Leftrightarrow (4) \Leftrightarrow (5)$, and obviously $(2) \Rightarrow (1)$. It is also true that $(1) \Rightarrow (5)$. For suppose that f is a weak solution of Problem $\partial NP\mathcal{P}'$. For any $\varepsilon > 0$ let $M(\varepsilon) = [m_{ij}(\varepsilon)]$ where

$$m_{ij}(\varepsilon) = \frac{f(x_i + i\varepsilon) - \overline{f(x_j + i\varepsilon)}}{x_i + i\varepsilon - (x_j - i\varepsilon)}$$

for $1 \leq i, j \leq n$. By the original theorem of Pick, $M(\varepsilon) \geq 0$. By the Carathéodory–Julia Theorem (for example, [16, VI]), as $\varepsilon \rightarrow 0$,

$$m_{jj}(\varepsilon) = \frac{2i \operatorname{Im} f(x_j + i\varepsilon)}{2i\varepsilon} \rightarrow f'(x_j).$$

It follows that $M(\varepsilon)$ tends to a matrix $M' \geq 0$ which is related to the Pick matrix M of Problem $\partial NP\mathcal{P}'$ by

$$M = M' + \operatorname{diag} \{v_1 - f'(x_1), \dots, v_n - f'(x_n)\}.$$

Since each $f'(x_j) \leq v_j$ we have $M \geq 0$. Thus $(1) \Rightarrow (5)$. □

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