Addendum to the product defined as in (2) of

On merit functions for p-order cone complementarity problem

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For the product defined as in (2), there is a sentence below it stated as

"From the above definition (2) of product, when $p = q = 2$, it is not hard to see that the product $x \bullet y$ is exactly the Jordan product in the setting of second-order cone."

The product does not really reduce to the Jordan product in SOC setting when $p = q = 2$, however, it reduces to the Jordan product in SOC setting as long as x, y satisfy POCCP. This is the main motivation of defining such a product. Therefore, the more precise statement should be

"From the above definition (2) of product, when x, y satisfy POCCP and $p = q = 2$, it is not hard to see that the product $x \bullet y$ is exactly the Jordan product in the setting of second-order cone."