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Erratum

Erratum to "The Partial Inner Product Space Method: A Quick Overview"

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The definition of homomorphism given in Section 5.2.2 is incorrect. Here is the exact definition. The rest of the discussion is correct.

Let V_I, Y_K be two LHSs or LBSs. An operator $A \in \mathrm{Op}(V_I, Y_K)$ is called a *homomorphism* if

(i) for every $r \in I$, there exists $u \in K$ such that both A_{ur} and $A_{\overline{ur}}$ exist;

(ii) for every $u \in K$, there exists $r \in I$ such that both A_{ur} and $A_{\overline{ur}}$ exist.

Equivalently, for every $r \in I$, there exists $u \in K$ such that $(r, u) \in j(A)$ and $(\overline{r}, \overline{u}) \in j(A)$, and for every $u \in K$, there exists $r \in I$ with the same property.

The definition may be rephrased as follows: $A : V_I \to Y_K$ is a homomorphism if

$$\mathrm{pr}_1\Big(\mathrm{j}(A) \cap \overline{\mathrm{j}(A)}\Big) = I, \qquad \mathrm{pr}_2\Big(\mathrm{j}(A) \cap \overline{\mathrm{j}(A)}\Big) = K, \tag{1}$$

where $\overline{\mathrm{j}(A)} = \{(\overline{r}, \overline{u}) : (r, u) \in \mathrm{j}(A)\}$ and $\mathrm{pr}_1, \mathrm{pr}_2$ denote the projection on the first, respectively, the second component.

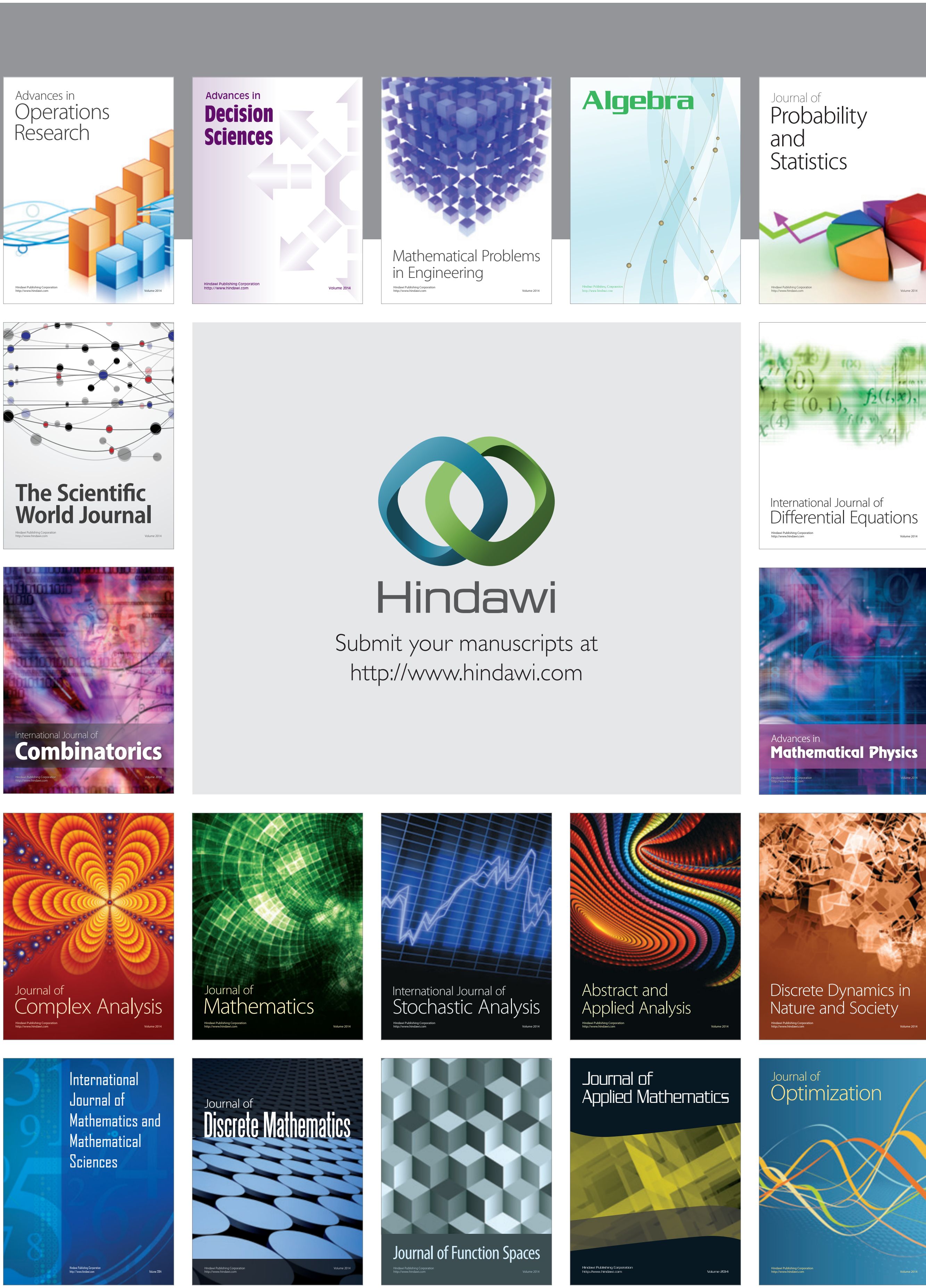
Contrary to what is stated in [1, Definition 3.3.4], the condition (1), which is the correct one, does *not* imply $\mathrm{j}(A) = I \times K$ and $\mathrm{j}(A^\times) = K \times I$.

We denote by $\mathrm{Hom}(V_I, Y_K)$ the set of all homomorphisms from V_I into Y_K. The following property is easy to prove:

Let $A \in \mathrm{Hom}(V_I, Y_K)$. Then, $f \#_I g$ implies $Af \#_K Ag$.

References

[1] J.-P. Antoine and C. Trapani, *Partial Inner Product Spaces—Theory and Applications*, vol. 1986 of *Springer Lecture Notes in Mathematics*, Springer, Berlin, Germany, 2010.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