ROMANIAN MATHEMATICAL MAGAZINE

If $a,b>0$, $a+b=2$ then:

$$\frac{a}{\sqrt{2-a}}+\frac{b}{\sqrt{2-b}}\geq 2$$

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Solution by Tapas Das-India

$$\frac{a}{\sqrt{2-a}}+\frac{b}{\sqrt{2-b}}=\frac{a^{\frac{3}{2}}}{\sqrt{2a-a^2}}+\frac{b^{\frac{3}{2}}}{\sqrt{2b-b^2}}\overset{Radon}{\geq}$$

$$\geq\frac{(a+b)^{\frac{3}{2}}}{\sqrt{2(a+b)-(a^2+b^2)}}\overset{CBS}{\geq}\frac{(a+b)^{\frac{3}{2}}}{\sqrt{2(a+b)-\frac{(a+b)^2}{2}}}\overset{a+b=2}{=}\frac{2^{\frac{3}{2}}}{\sqrt{4-2}}=2$$

$$Equaliy\ holds\ for\ a=b=1$$