

## Verifica ordine convergenza metodo RK

```
> restart;  
> ns := 2 ;
```

$$ns := 6$$

(1)

```
> A := <<1/4, 1/4+sqrt(3)/6>|<1/4-sqrt(3)/6, 1/4>> ;
```

$$A := \begin{bmatrix} \frac{1}{4} & \frac{1}{4} - \frac{1}{6}\sqrt{3} \\ \frac{1}{4} + \frac{1}{6}\sqrt{3} & \frac{1}{4} \end{bmatrix}$$

(2)

```
> c := <1/2-sqrt(3)/6, 1/2+sqrt(3)/6> ;
```

$$c := \begin{bmatrix} \frac{1}{2} - \frac{1}{6}\sqrt{3} \\ \frac{1}{2} + \frac{1}{6}\sqrt{3} \end{bmatrix}$$

(3)

```
> b := <1/2|1/2> ;
```

$$b := \begin{bmatrix} \frac{1}{2} & \frac{1}{2} \end{bmatrix}$$

(4)

Verifica consistenza

```
> UNO := <1,1> ;
```

$$UNO := \begin{bmatrix} 1 \\ 1 \end{bmatrix}$$

(5)

```
> A.UNO-c ; # ok
```

$$\begin{bmatrix} 0 \\ 0 \end{bmatrix}$$

(6)

Verifica ordine 1

```
> b.UNO ; # ok
```

$$1$$

(7)

Verifica ordine 2

```
> b.c - 1/2 ; # ok
```

$$0$$

(8)

Verifica ordine 3

```
> c2 := c^~2 ;
```

$$c2 := \begin{bmatrix} \left(\frac{1}{2} - \frac{1}{6}\sqrt{3}\right)^2 \\ \left(\frac{1}{2} + \frac{1}{6}\sqrt{3}\right)^2 \end{bmatrix}$$

(9)

```
> simplify(b.c2)-1/3 ; # ok
```

$$0$$

(10)

```
> Ac := simplify(A.c) ;
```

$$Ac := \begin{bmatrix} \frac{1}{6} - \frac{1}{12} \sqrt{3} \\ \frac{1}{6} + \frac{1}{12} \sqrt{3} \end{bmatrix} \quad (11)$$

```
> simplify(b.Ac)-1/6 ; # ok
```

$$0 \quad (12)$$

verifica ordine 4

```
> c3 := c^~3 ;
```

$$c3 := \begin{bmatrix} \left( \frac{1}{2} - \frac{1}{6} \sqrt{3} \right)^3 \\ \left( \frac{1}{2} + \frac{1}{6} \sqrt{3} \right)^3 \end{bmatrix} \quad (13)$$

```
> simplify(b.c3)-1/4 ;
```

$$0 \quad (14)$$

```
> bc := b*~c ;
```

$$bc := \begin{bmatrix} \frac{1}{4} - \frac{1}{12} \sqrt{3} & \frac{1}{4} + \frac{1}{12} \sqrt{3} \end{bmatrix} \quad (15)$$

```
> simplify(bc.Ac)-1/8 ; # ok
```

$$0 \quad (16)$$

```
> bA := b.A ;
```

$$bA := \begin{bmatrix} \frac{1}{4} + \frac{1}{12} \sqrt{3} & \frac{1}{4} - \frac{1}{12} \sqrt{3} \end{bmatrix} \quad (17)$$

```
> simplify(bA.c2)-1/12 ; # ok
```

$$0 \quad (18)$$

```
> simplify(bA.Ac)-1/24 ; # ok
```

$$0 \quad (19)$$

```
>
```