EX4

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Script que resolve o exercício 4 da lista de simulação para entradas quaisquer, particularmente as indicadas no enunciado.

Calling Syntax

crelb = ex4(arelu,arelb,urelc)

I/O Variables

`IN Double Array` **arelu**: *User form* [x y theta] [meters meters degrees]

`IN Double Array` **arelb**: *User form* [x y theta] [meters meters degrees]

`IN Double Array` **urelc**: *User form* [x y theta] [meters meters degrees]

`OU Double Array` **crelb**: *User form* [x y theta] [meters meters degrees]

Example

```
arelu = [11 -1  30]
arelb = [0   7  45]
urelc = [-3 -3 -30]
crela = ex4(arelu,arelb,urelc);
```

Hypothesis

RRR planar robot.

Limitations

A "Forma do usuário" é específica para o exercício de simulação e não tem validade para qualquer configuração de robô.

Version Control

1.0; Grupo 04; 2025/03/18 ; First issue.

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Function

```
function crelb = ex4(arelu,arelb,urelc)
```

Validity

Not apply

Main Calculations

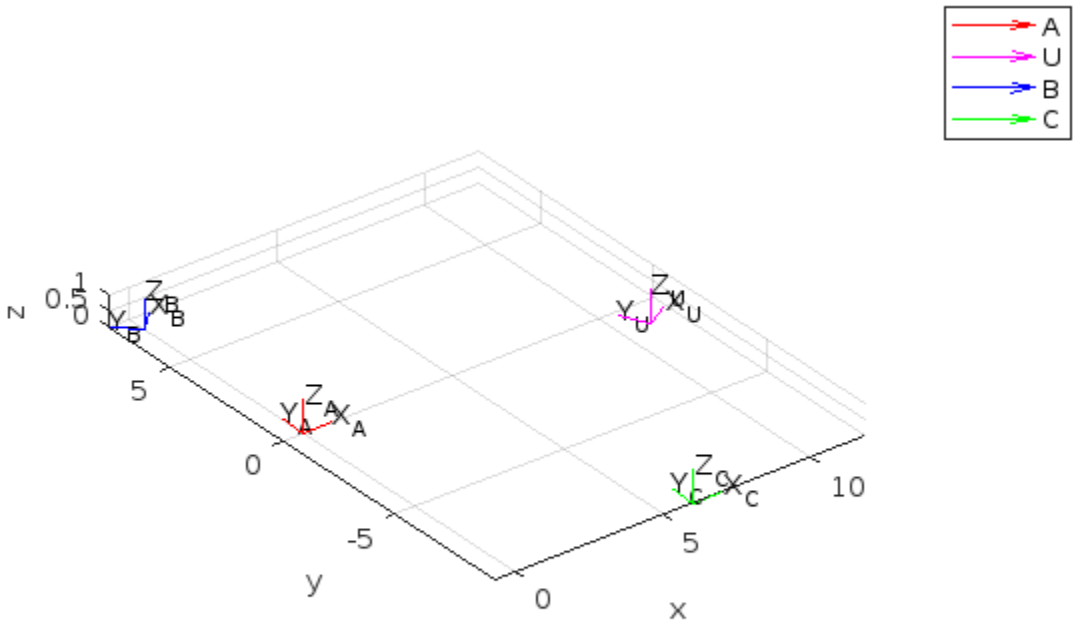
```
    arelu=utoi(arelu);
    arelb=utoi(arelb);
    urelc=utoi(urelc);

    crela=tmult(tinvert(arelu),tinvert(urelc));
    crelb = tmult(arelb,crela);
    disp('Internal form:')
    disp(crelb)
```

```
Internal form:
    0.7071   -0.7071         0  -10.8840
    0.7071    0.7071         0    9.3616
         0         0    1.0000         0
         0         0         0    1.0000
```

Figure

```
    system2([1 0 0 0; 0 1 0 0; 0 0 1 0; 0 0 0 1],'A','r');
    hold on;
```

```
    system2(arelu,'U','m');
    hold on;
    system2(arelb,'B','b');
    hold on;
    system2(tinvert(crela),'C','g');
    legend('','A','','','U','','','B','','','C','')
```



Output Data

```
    crelb = itou(crelb);
    disp('User form:')
    disp(crelb)
```

```
User form:
  -10.8840    9.3616   45.0000
```

```
end
```

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