



Exercise 2: (Compound) Materials

Beginners' FLUKA Course

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```
mkdir ex2
```

```
cd ex2
```

download the previous ex1.inp and rename it to ex2.inp

```
mv ex1.inp ex2.inp
```

- add two compound materials (beer and CO₂) and assign them to the target and the region around it (respectively)

```
emacs [or any editor] ex2.inp &
```

Use as components the materials pre-defined in FLUKA

- Assume a beer composition (MASS content) of:
 - 90 % WATER and
 - 10 % ETHANOL (CH₃CH₂OH)
- Assume (for BEER) a density of 1 g/cm³
- calculate the density of CO₂ for standard conditions (22.4 l/mol)

run your new ex2.inp in the ex2 dir

```
$FLUPRO/flutil/rfluka -M3 ex2
```

- compare the energy deposited into the target and the region around it, now and in the previous case (ex1 directory)

Do the same for the probability that a primary proton undergoes an inelastic collision (BEAMPART Star Density in the .out file)