

## NAME

subresgen - generate technology data for substrate resistance extraction

## SYNOPSIS

```
subresgen [-cv]  
subresmkdir dirname min_term_size
```

## OPTIONS

**-c** Only generate a file "dospace" that contains the commands to run *space3d* on the terminal configurations.

**-v** More verbose.

## DESCRIPTION

The tool *subresgen* applies *space3d* with the boundary-element method for substrate resistance extraction to compute substrate resistances for some standard substrate terminal configurations. These substrate resistances are then used to generate "selfsubres" and "coupsubres" entries in a space element definition file that can be used with *space3d* to extract substrate substrate resistances using the fast interpolation method. The command *subresmkdir* creates a working project directory for *subresgen*.

The application is described in more detail below.

### STEP 1.

Create an element definition file called "space.def.s" for *space3d* that contains at least an entry "sublayers" that describes the profile of the substrate that you consider (see the "Space Substrate Resistance Extraction User's Manual"). It is important for *subresgen* that the keyword "sublayers" starts at the beginning of a line, and that the body of the sublayers entry does not contain empty lines. Further, the body should be followed by an empty line. The same should hold for possible entries "selfsubres" and "coupsubres" that are contained by the file. But note that these entries will be overwritten by *subresgen*.

### STEP 2.

Run *subresmkdir* to create a working project directory for *subresgen*. As a first argument you need to specify the name of the working directory. As a second argument you need to specify (in nm) the minimum size of a substrate terminal. Move the file "space.def.s" to the working directory that you created with *subresmkdir*.

### STEP 3.

Run *subresgen* in the working project directory that you created with *subresmkdir*. You will see that messages appear about the *space3d* runs that are performed to compute the substrate resistances. At the end, the element definition file "space.def.s" will be modified to contain the "selfsubres" and "coupsubres" entries.

## EXAMPLES

```
% vi space.def.s  
% subresmkdir bicmos 180  
% cd bicmos  
% mv ../space.def.s .  
% subresgen
```

## AUTHOR

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## FILES

*dirname*  
project directory with terminal configurations

*dirname*/.min\_term\_size  
minimum substrate terminal size

*dirname*/process  
process directory for *space3d* runs

*dirname*/space.def.s  
input and output element definition file