

angular momentum raising lowering ladder operators

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hello,

are there any angular momentum operators for, say, a hydrogen atom, that raise and lower the angular quantum number l (ell) up and down, as opposed to the $L_x + iL_y$ type operators that move the magnetic quantum number m , "sideways" as it were but leave l unchanged? so what i guess i'm asking is there some kind of differential equation that generates the $l+1$ 'th spherical harmonic from the l 'th, or, or, something!

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