2016/9/18 (2). (().

$$|J_{z}| = \frac{1}{\sqrt{3}} \left(|d_{yz}| + i |d_{zx}| + |d_{xy}| + |d_{xy}| \right)$$

$$P: (x,y,t) \rightarrow (-x+\frac{1}{2}, -y+\frac{1}{2}, t) \times \mathcal{V}_{x}$$

$$T: (x,y,t) \rightarrow (x,y,-t) \times iG_{y} \times (iG_{y}) \times (iG$$

Dirac Fermions in AFM somiment.

2016/9/18 (2)

(2).

 $G_{x}PT \mid J_{z} = \frac{1}{3} \rangle = \frac{1}{3} \left(i \mid -d_{yz} \downarrow, \nu=2, x,-y+1,-t \right)^{*} + |d_{zx}, \downarrow, \nu=2, x,-y+1,-t \rangle$

-i (-dxy, 1, D=2, x, -y+1, -t)*).

 $G_x | J_z = \frac{1}{2} \rangle = \frac{1}{\sqrt{3}} \left(G_x | d_{yz} \downarrow \rangle + i G_x | d_{zx} \downarrow \rangle + G_x | d_{xy} \uparrow \rangle \right)$

= $\frac{1}{\sqrt{3}}$ (i | dy = 1, $-x+\frac{1}{2}$, $y+\frac{1}{2}$, t) - $|-d_{ex} \uparrow, \nu=1, -x+\frac{1}{2}$, $y+\frac{1}{2}$, t)

+i |-dxy 1, v=1, -x+1, y+1, t)

 $PTG_{x}|J_{z}=\frac{1}{3} = \frac{1}{\sqrt{3}} \left(-i PT|d_{yz} \uparrow, \nu=1, -x+\frac{1}{3}, y+\frac{1}{3}, t\right)$ $-PT|-d_{zx}\uparrow, \nu=1, -x+\frac{1}{3}, y+\frac{1}{3}, t\right)$ $-i PT|-d_{xy}\downarrow, \nu=1, -x+\frac{1}{3}, y+\frac{1}{3}, t\right)$

= $\frac{1}{\sqrt{3}} \left(+i \mid -dyz, \downarrow, \upsilon = 2, \chi, -y, -t \right)^* + |d_{zx}, \downarrow, \upsilon = 2, \chi, -y, -t \right)^*$

-i |-day, 1, D=2, x, -y, -t>*)

 $PT | J_{z} = \frac{1}{3} \left(| -d_{yz} \uparrow \nu = 2, -x + \frac{1}{2}, y + \frac{1}{3}, -t \right)^{*} - i \left| -d_{zx} \uparrow, \nu = 2, -x + \frac{1}{3}, y + \frac{1}{3}, -t \right)^{*} - i \right|$

- dxy 1, v=2,-x+1,-y+1,-t>*)

 $S_{x}PT[J_{z}=\frac{1}{3}] = \frac{1}{\sqrt{3}} \left(S_{x}[-d_{yz} \uparrow \nu=2, -x+\frac{1}{3}, -y+\frac{1}{3}, -t]^{*}\right)$

-i Sx | -dzx +, U=2, -x+1, -y+1, -t]+

-Sx dxy 1, D=2, -x+1, -y+1, -t >*)

 $=\frac{1}{13}\left(+|+dy_{z}|, 1, D=2, x+\frac{1}{2}, -y+\frac{1}{2}, -t\right)^{*}$

+i dzx, b, D=2, x+=,-y+=,-t)*

 $+ | + d_{xy} \uparrow, \nu = 2, x + \frac{1}{2}, -y + \frac{1}{3}, -t \rangle^*$

 $Sx|_{\overline{\lambda}=\frac{1}{2}}\rangle = \frac{1}{\sqrt{3}}\left(Sx|_{\overline{\delta}yz}\downarrow\gamma + iSx|_{\overline{\delta}zx}\downarrow\gamma + Sx|_{\overline{\delta}xy}\uparrow\gamma\right)$

= 13 (| dyz 1, v= -x+1, y, t7 + i | -dzx 1, v=2, -x+1, y, t7

- |-dxy L, v=2, -x+1, y, t >

PTSx Jz== >7 = = PT | dyz 1, U=2, -x+1, y,t >-iPT | -dzx 1, U=2, -x+1,y,t) -PTI-dxy, L, D=2, -x+1, y, t) = 13 (- 1-dy= 1, U=2, x-1, -y+1, -t) +i | dex 1, U=2, x-1, -y+1, -t)* $-1-d_{xy} \uparrow \nu=2, x-\frac{1}{2}, -y+\frac{1}{2}, -t$ = \frac{1}{3} \left(| dyz, \left\, \nu=2, \lambda-\frac{1}{2}, -\frac{1}{2}, -\frac{1 + | dxy 1 v=2, x-=, -y+=, -t)*) PT $|J_z = \frac{1}{\sqrt{3}} \left(|-d_{gz} \uparrow \nu = 2, -x + \frac{1}{2}, -y + \frac{1}{2}, -t \right)^* - i \left| -d_{zx} \uparrow, \nu = 2, -x + \frac{1}{2}, -y + \frac{1}{2}, -t \right)^*$ $-|dxy \downarrow \nu=2, -x+\frac{1}{2}, -y+\frac{1}{2}, -t$

 $M_{z} PT | J_{z} = \frac{1}{2} \rangle = \frac{1}{\sqrt{3}} \left(M_{z} | -d_{3z} \uparrow D = 2, -x + \frac{1}{2}, -y + \frac{1}{2}, -t \right)^{x} - i | -d_{zx} \uparrow, D = 2, -x + \frac{1}{2}, -y + \frac{1}{2}, -t \right)^{x}$ $-M_{z} M_{z} | d_{xy} \downarrow D = 2, -x + \frac{1}{2}, -y + \frac{1}{2}, -t \right)^{x}$

ONEMORINET POUNDANT WEST

2016/9/18/2 (5)

```
M=PT | J===>=== (i | -dy= 1 v=1, -x+1, -y+1, -t)* + | -d=x 1, v=1, -x+1, -y+1,-
             +i dxy 1, D=1, -x+1, -y+1, -t>*
 M= |J===>== (M= |dy= 17 + i M= |dzx 17 + M= |dxy 17)
    = = (-i | dyz | D=2, x+\frac{1}{2}, y+\frac{1}{2}, t \gamma + \frac{1}{2} \lambda \pi = 2, x+\frac{1}{2}, y+\frac{1}{2}, t \gamma
            +i day 1 v=2, x+1, y+1, t7
PTMz | Jz= => = = (i PT | dyz + v=2, x+=,y+=,t)
                       + PT | dzx 1 D=2, x+1, y+1, t >
                       -i PT | dxy + D=2, x++, y++, t>)
    = 1 (i |-dy= 1 D=1, -x, -y, -t) + |-d=x 1 D=1, -x, -y, -t)*
           +i dry D=11,-x,-y,-t)*)
    = 1 (-i | dyz T v=1,-x,-y,-t)* - | dzx T v=1,-x,-y,-t)*
          +i | day & 1, u-1, -x, -y, -t >* ).
```

Aloose ABBLIBOLD Spill Superfluidity.

 $|J_z = -\frac{1}{2} = \frac{1}{\sqrt{3}} \left[|d_{yz} \uparrow \gamma - i| |d_{zx} \uparrow \rangle - |d_{xy} \downarrow \gamma \right]$

PT | J=-17= 13 (PT | dyz 17 +i PT | dzx17 - PT | dxy 17)

= 13 (-1-dy=1, v=2, -x+1,-y+1,-t)*=i |-dex1,v=2,-x+1,-y+1,-t)*

 $- | d_{xy} \uparrow, \nu = 2, -x + \frac{1}{2}, -y + \frac{1}{2}, -t \rangle^*$

= \frac{1}{3} \left(| dyz \dagger , \nu=2, -\chi+\frac{1}{2}, -\chi+\

GxPT | Jz=- = 7 = = (Gx | dyz 1, D=2, -x+=, -y+=, -t)*

 $+i G_{x} | d_{zx} \downarrow, \nu=2, -x+\frac{1}{2}, -y+\frac{1}{2}, -t)^{*}$ - $G_{x} | d_{xy} \uparrow, \nu=2, -x+\frac{1}{2}, -y+\frac{1}{2}, -t)^{*}$

 $=\frac{1}{\sqrt{3}}\left(\frac{1}{1}\left|dy_{z}\uparrow, \nu=2, x, -y+1, -t\right\rangle^{*}\right)$

- \ - dzx +, v=2, x, -y+1, -t >*

-i |-day 1, D=2, x, -y+1, -t)*)

= $\frac{1}{\sqrt{3}} \left(i | d_{yz} \uparrow, \sigma v = 2, \chi, -y + 1, -t \right)^{+} + | d_{z\chi} \uparrow, v = 2, \chi, -y + 1, -t \right)^{+} + i | d_{xy}, l, v = 2, \chi, -y + l - t \right)^{+}$

```
2016/9/18 (2) (1).
Gx [J=-=] = = (Gx |dy=1) - i Gx |dex T) - Gx |dxy 1)
 = 1 i | dy 1 v=1, -x+1, y+1, t) + |-dx 1, v=1, -x+1, y+1, t)
         -i | -dxy 1, -x+=, y+=, t)
PTG_{x}|J_{z}=-\frac{1}{2} = \frac{1}{\sqrt{3}} (-i PT | d_{yz} \downarrow D=1, -x+\frac{1}{2}, y+\frac{1}{2}, t)
           +PT | -dex +, v=1, -x+=, y+=, t)
          +i PT | -dxy 1, -x+= ,9+=, t>
= 1 (- i | -dyz 1 v=2, x,-y,-t) + | dzx 1 v=2, x,-y,-t)
      - oi (-dxy 1, x,-y,-t)*)
= 13 ( i | dyz + D=2, x, -y, -t) + | dzx + D=2, x, -y, -t)*
        +i | day 1, v=2, x, -y, -t)*).
```

```
2016/9/18/2 (8).
           S_{x}PT|J_{z}=-\frac{1}{2}\rangle = \frac{1}{\sqrt{3}}(S_{x}|d_{yz}), \nu=2, -x+\frac{1}{2}, -y+\frac{1}{2}, -t)^{*}
                                                                                                                                                               +i Sx dzx 1, U=2, -x+ 1, -9+1, -t >+
                                                                                                                                                          - Sx dxy 1, D=2, -x+=, -y+=, -t>*)
      =\frac{1}{\sqrt{3}}\left[d_{yz}\uparrow D=1, x+\frac{1}{2}, -y+\frac{1}{2}, -t\right]^{*}
                                                         +i |-dzx 1, v=1, x+1, -y+1, -t)*
                                                            + |-dxy 1, b=1, x+1, -y+1, -t) )
              Sx | Jz= -= > = = (Sx | dyz +7 - i Sx | dzx +7 - Sx | dxy +7)
                                        = \sqrt{3} \left( - \left| d_{yz}, \downarrow, \nu = 2, -x + l, y, t \right. \right)
                                                                                    +i |-dex 1, v=2, -x+1, y, t7 - |-dxy 1, v=2, -x+1, y, t7)
PTS_{\times}|J_{z}=-\frac{1}{2}\rangle = \frac{1}{\sqrt{3}}\left(-PT|d_{yz}, \downarrow, \nu=2, -x+1, y, t\right)
                                                            -iPT |-dzx 1 U=2, -x+1, y, t>+PT | dxy1, U=2, -x+1, y, t>
     = \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \right) - \frac{1}{\sqrt{3}} \left( -\frac
                                                  -i | dzx T, D=1, x-1, -y+1, -t> - | dxy 1, D=1, +x-1, -y+1, -t>
```

| Jz = 1 > = 1 (| doz 1 > + i | dzx 1 > + | dxy 1 >)

 $= \frac{1}{\sqrt{3}} \left(i | d_{yz}, \downarrow, \nu=1, -x+\frac{1}{2}, y+\frac{1}{2}, t \right) - \left| -d_{zx} \downarrow, \nu=1, -x+\frac{1}{2}, y+\frac{1}{2}, t \right) + i \left| -d_{xy} \uparrow, \nu=1, -x+\frac{1}{2}, y+\frac{1}{2}, t \right)$

 $G_{x}^{2} | J_{z} = \frac{1}{3} = \frac{1}{\sqrt{3}} (i G_{x} | dy_{z}, l, \nu=1, -x+\frac{1}{2}, y+\frac{1}{2}, t)$

+ Gx | dzx V, U=1, -x+1, y+1, t>

+i Gx | -dxy 1, D=1, -x+ \(\frac{1}{2}\), \(\frac{1}{2}\)

 $= \frac{1}{\sqrt{3}} \left(- | d_{yz}, 1, \nu=1, x, y+1, t \rangle = i | d_{zx} 1, \nu=1, x, y+1, t \rangle - | d_{xy}, \uparrow, \nu=1, x, y+1, t \rangle$

 $G_{x}^{2}|J_{z}=\frac{1}{3}\rangle=-\frac{iky}{2}|J_{z}=\frac{1}{3}\rangle$

```
2016/9/18/2 (10)
```

$$|J_z=\frac{1}{2}\rangle=\frac{1}{\sqrt{3}}\left(|d_{yz}\uparrow\gamma-i|d_{zx}\uparrow\gamma-|d_{xy}\downarrow\gamma\right)$$

$$G_{x}^{\bullet}|J_{z}=-\frac{1}{2}$$
 = $\frac{1}{\sqrt{3}}$ $\left(G_{x}|d_{yz}\uparrow7-iG_{x}|d_{zx}\uparrow7-G_{x}|d_{xy}\downarrow7\right)$

$$= \frac{1}{\sqrt{3}} \left(i | d_{yz} \uparrow, \nu=1, -x+\frac{1}{2}, y+\frac{1}{2}, t \right) + \left[-d_{zx} \uparrow, \nu=1, -x+\frac{1}{2}, y+\frac{1}{2}, t \right)$$

$$= \frac{1}{\sqrt{3}} \left(- | d_{yz}, \uparrow, \nu=1, +x, y+1, t \rangle + i | d_{zx}, \uparrow, \nu=1, -x, y+1, t \rangle + | d_{xy}, \uparrow, \nu=1, x, y+1, t \rangle \right)$$

$$G_x^2 | J_z = -\frac{1}{2} \rangle = -\frac{i^{ky}}{2} | J_z = -\frac{1}{2} \rangle$$

THAT!

2016/9/18/2 (11).

1 Jz= = = = = (| dyz b7 + i | dzx b7 + | dxy 17)

Sx | Jz = = = = = = (Sx | dyz 17 + i Sx | dzx 17 + Sx | dxy 17)

 $= \frac{1}{\sqrt{3}} \left(| dyz \uparrow, \nu=2, -x+1, y, t \right) + i \left| -dzx \uparrow, \nu=2, -x+1, y, t \right)$

~ |-dxy ↓, U=2, -x+1, y, t>)

= 13 (| dyz T, v=2, -x+1, y, t) -i | dzx T, v=2, -x+1, y, t)

+ | dxy 1, v=2, -x+1, y, t)

 $S_{\chi}^{2}\left|J_{z}=\frac{1}{2}\right\rangle = \frac{1}{\sqrt{3}}\left(-\left|d_{yz},\downarrow,\nu=1,\chi,y,t\right\rangle + i\left|-d_{z\chi}\downarrow,\nu=1,\chi,y,t\right\rangle$

- | dxy +, D=1, x, y, t)

 $S_x^2 | J_z = \frac{1}{2} \rangle = - | J_z = \frac{1}{2} \rangle$

 $S_{x} | J_{z} = \frac{1}{2} \rangle = \pm i | J_{z} = \frac{1}{2} \rangle$

2016/9/18/2 (12)

 $|J_z=\frac{1}{3}\rangle=\frac{1}{\sqrt{3}}\left(|d_{xyz}\downarrow\rangle+i|d_{zx}\downarrow\rangle+i|d_{xy}\uparrow\rangle\right)$

Mz | Jz= = > = = (- 1) (- 1) dyz +, v=2, x+3, y+1, t>

1 dzx 1, v=2, x+3, y+3, t> +i | dxy 1, v=2, x+3, y+3, t>)

 $M_z^2 | J_z = \frac{1}{\sqrt{3}} \rangle = \frac{1}{\sqrt{3}} \left(- | d_{yz} \downarrow, \nu = 1, x+1, y+1, t \rangle - i | d_{zx} \downarrow \nu = 1, x+1, y+1, t \rangle - | d_{xy} \uparrow, \nu = 1, x+1, y+1, t \rangle \right)$

 $M_z^2 | J_z = \pm \rangle = -e^{ik_x} e^{ik_y} | \bigcirc J_z = \pm \rangle$

```
G_{x}(J_{z}=\frac{1}{2},x,y,t), \nu=1 + J_{z}=\frac{1}{2},x+\frac{1}{2},y+\frac{1}{2},t,\nu=1 >
                        + J_z = \frac{1}{2}, x,y,t,\nu=2 + J_z = \frac{1}{2}, x+\frac{1}{2}, y+\frac{1}{2}, t \nu=2
  = i \left[ J_z = -\frac{1}{3}, -x + \frac{1}{3}, y + \frac{1}{3}, t, \nu = 1 \right] + i \left[ J_z = -\frac{1}{3}, -x, y + 1, ot, \nu = 1 \right]
          +i|J_z=\frac{1}{2},-x+\frac{1}{2},y+\frac{1}{2},t,\nu=2 +i|J_z=-\frac{1}{2},-x,y+|,t,\nu=2

\mathcal{G}_{x}^{1}[\mathbf{0}] = (1)

- | \mathcal{J}_{z} = \frac{1}{2}, \chi, y+1, t, \quad \nu=1 \rangle - | \mathcal{J}_{z} = \frac{1}{2}, \chi+\frac{1}{2}, y+\frac{3}{2}, t, \nu=1 \rangle

                    -|J_z=\frac{1}{2}, x, y+1, t, \nu=2 -|J_z=\frac{1}{2}, x+\frac{1}{2}, y+\frac{3}{2}, t, \nu=2 
         S_{x} \left\{ J_{z} = \frac{1}{2}, x, y, t, \nu = 1 \right\} + \left\{ J_{z} = \frac{1}{2}, x + \frac{1}{2}, y + \frac{1}{2}, t, \nu = 1 \right\}
                       +|J_z=\frac{1}{2}, x_1y_1t_2D=2\rangle + |J_z=\frac{1}{2}, x_1+\frac{1}{2}, y_1+\frac{1}{2}, t_2D=2\rangle
       = \left( - \left| J_{z=-\frac{1}{2}}, -\chi_{+} \right|, y, t, D=2 \right) - \left| J_{z=-\frac{1}{2}}, -\chi_{+\frac{1}{2}}, y_{+\frac{1}{2}}, t, D=2 \right)
                      -|J_z=-\frac{1}{2},-\chi+1,y,t,\nu=1\gamma-|J_z=-\frac{1}{2},-\chi+\frac{1}{2},y+\frac{1}{2},t,\nu=1\gamma
  S_{x}^{2}\left(\begin{array}{c}\right) = \left(-\left|J_{z=\frac{1}{2}}, x, y, t, \nu=1\right\rangle - \left|J_{z=\frac{1}{2}}, x+\frac{1}{2}, y+\frac{1}{2}, t, \nu=1\right\rangle
                                   -|J_z=\frac{1}{2}, x, y, t, D=2 \rangle - |J_z=+\frac{1}{2}, x+\frac{1}{2}, y+\frac{1}{2}, t, D=2 \rangle
```

```
M_z J_z = \frac{1}{2}, x, y, t, \nu = 1 + J_z = \frac{1}{2}, x + \frac{1}{2}, y + \frac{1}{2}, t, \nu = 1
                + \left[ J_z = \frac{1}{2}, \chi_1 y, t, \nu = 27 + \left[ J_z = \frac{1}{2}, \chi_{+} + \frac{1}{2}, y + \frac{1}{2}, t, \nu = 27 \right] 
     = (i | J_z = \frac{1}{2}, x + \frac{1}{2}, y + \frac{1}{2}, t, \nu = 2) + i | J_z = \frac{1}{2}, x + 1, y + 1, t, \nu = 2)
           i \mid J_z = \frac{1}{2}, x + \frac{1}{2}, y + \frac{1}{2}, t, D = 17 + i \mid J_z = \frac{1}{2}, x + 1, y + 1, t, D = 17
M_z^2() = (-|J_z=\frac{1}{2}, \chi+1, y+1, t, \nu=1) - |J_z=\frac{1}{2}, \chi+\frac{3}{2}, y+\frac{3}{2}, t, \nu=1)
                -\left|J_{z}=\frac{1}{2}, \chi+1, y+1, t, \nu=2 \right| -\left|J_{z}=\frac{1}{2}, \chi+\frac{3}{2}, y+\frac{3}{2}, t, \nu=2 \right|
```

$$2016/9/18/2 (15).$$

$$Cos \frac{1}{2} | J_z = \frac{1}{2} \rangle + sln \frac{1}{2} e^{i\phi} | J_z = -\frac{1}{2} \rangle$$

$$= cos \frac{1}{2} (| J_z = \frac{1}{2} \rangle + sln \frac{1}{2} e^{i\phi} | J_z = -\frac{1}{2} \rangle)$$

$$= cos \frac{1}{2} (| J_z = \frac{1}{2} \rangle + sln \frac{1}{2} e^{i\phi} | J_z = \frac{1}{2} \rangle - x_7 \frac{1}{2} \cdot y_7 \frac{1}{2} \cdot y_7 \frac{1}{2} \rangle$$

$$G_3'() = -cos \frac{1}{2} | J_z = \frac{1}{2} \rangle - x_7 \frac{1}{2} \cdot y_7 \frac{1}{2} \cdot y_7 \frac{1}{2} \rangle$$

$$G_3'() = -cos \frac{1}{2} | J_z = \frac{1}{2} \rangle - x_7 \frac{1}{2} \cdot y_7 \frac{1}{2} \cdot y_7 \frac{1}{2} \rangle$$

$$G_3'() = -cos \frac{1}{2} | J_z = \frac{1}{2} \rangle - x_7 \frac{1}{2} \cdot y_7 \frac{1}{2} \cdot y_7 \frac{1}{2} \rangle$$

$$G_3'() = -cos \frac{1}{2} | J_z = \frac{1}{2} \rangle - x_7 \frac{1}{2} \cdot y_7 \frac{1}{2} \cdot y_7 \frac{1}{2} \rangle$$

$$G_3'() = -cos \frac{1}{2} | J_z = \frac{1}{2} \rangle - x_7 \frac{1}{2} \cdot y_7 \frac{1}{2} \cdot y_7 \frac{1}{2} \rangle$$

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