December

Change the matlab program into c++

12/15

- [x] Check the program, whether the positron and electron are in the same channel, whether there is a mistake in the energy and momentum.

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one mistake: I put omega^3 in the last. The index is wrong.
The Energy algorithm is changed, let it be 0 when it's less than 0;
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- [x] Check the derivation of procedure in the beginning of definitions of functions;
- [x] Read《Selected Works of Mao Zedong》for one chapter
- [x] Plant trees for at least 12 quantifiers.
- [x] Learn c++ for at least one hour.
- [x] Take oral english and writing english classes.

12/16

- [x] Check the program of energy and momentum step by step.
- [x] Go on the derivation without expansion.

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Understand Flourier transformation, T with $\nu$ time region to frequency
region. x to p, x space to p space
To learn more about Flourier transformation
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It seems that the B,C iterms have something wrong while the A,D can get the same probability.

- [x] Plant trees for at least 12 quantifiers.
- [x] Exercise for two hours.
- [x] Learn new melody at least one episode.
- [x] Learn C++ for at least one hour.

12/17

- [x] Give the speech in the morning and afternoon, the quantum field theory introduction.
- [x] Learn C++ for at least one hour, review the struct and srand;
  I'm so tired today, turn this to tomorrow.
- [ ] Go on check the derivation;
- [x] plant trees at least 12 quantifiers;

- [x] Calculate the 0101 cross-section.

12/18

- [x] Go on check the derivation;
- [ ] Learn c++ for at least one hour;
  I just learned for half an hour, since in Friday I listen to classic music of 巴赫 and Mozart;
- [x] Exercise for two hour;
- [x] Read《selected works of maozedong》
- [x] Plant at least for 12 trees;
- [x] Listennig to cello suite No.1 in G major;
- [x] Air on the G string;
- [x] Piano Sonata No.8 in C minor,Op 13 悲怆奏鸣曲

12/19

- [x] Change complex number into real number in the program;
- [ ] Read《Selected works of maozedong》for a chapter;
- [x] Write your Wechat eassy;
- [x] Listen to《D小调安魂弥撒曲》;

12/20

- [x] 打听激光加工相关的消息
- [ ] Find out the difference
- [x] Exercise for two hours

12/21

- [x] Read english for an hour
- [x] Read an article everyday, just title and abstruct;
- [x] Take the english class afternoon;
- [ ] Learn Magic tube 3 and upload a task; Learn how to use super computer;
- [x] Learn C++ for two hours;
- [ ] Learn why there is a mistake;
- [ ] Learn about spacevim;

12/22

😂

- [x] Summarize the evidence for my program;
- [ ] Learn Compton scattering and the functions of photons and electrons;
- [ ] Use geant4 to caculate the polarization of electrons and positrons;
- [ ] Plant trees for at least 12 quantifiers;;
- [ ] Learn C++ for at least 2 hours;
- [ ] Read an article, only abstract is ok;
- [x] Take the oral english class and writing class;
- [x] Listen to a piece of classical sound;

12/23

😊

- [ ] Plant 12 trees;
- [x] Learn Compton scattering and the functions of photons and electrons;
- [x] Use geant4 to calculate the polarization;
- [x] Exercise for two hours;
- [ ] Learn C++ for two hours;
- [x] Learn an article, only abstract is ok;
- [x] Listen to a new classic song;

12/24 silent night

- [x] Listen to songs about silent night;
- [x] Draw the pictures of every channel's tendency
- [x] Read an article
- [x] Go to see the doctor
- [ ] Plant at least 12 trees
- [x] Review the song of tuerqi
- [ ] Learn C++ for at least two hours

12/25

"We may encounter many defeats but we must not be defeated."

- [x] Amend the derivation;
- [ ] Plant at least 12 trees;
- [ ] Take part in science popularization work;
  I forget it;
- [x] Exercise for two hours;
- [ ] Learn C++ for two hours;
- [x] Listen to a classic song;
- [x] Practice Turkish March.

12/26

$$A^{l,\lambda}_{k_\perp,k_z,\mu}(x)=g_{\mu\nu}A^{l,\lambda,\nu}_{k_\perp,k_z}(x)=\varepsilon^{l,\lambda}_{k_\perp,k_z,\mu}(r,\theta)e^{ik_z z-i\omega t}=-\frac{e^{ik_z z-i\omega t}}{\sqrt{2}(2\pi)}\sqrt{\frac{1}{2\omega}}\begin{pmatrix}0\\ \frac{i}{2}\left[\left(1-\frac{k_z}{\omega}\right)J_{l+\lambda}(k_\perp r)e^{i(l+\lambda)\theta}+\left(1+\frac{k_z}{\omega}\right)J_{l-\lambda}(k_\perp r)e^{i(l-\lambda)\theta}\right]\\ \frac{\lambda}{2}\left[\left(1-\frac{k_z}{\omega}\right)J_{l+\lambda}(k_\perp r)e^{i(l+\lambda)\theta}-\left(1+\frac{k_z}{\omega}\right)J_{l-\lambda}(k_\perp r)e^{i(l-\lambda)\theta}\right]\\ \frac{\lambda k_\perp}{\omega}J_l(k_\perp r)e^{il\theta}\end{pmatrix}$$

$$\gamma^\mu\varepsilon^{l,\lambda}_{k_\perp,k_z,\mu}(r,\theta)=-\frac{1}{\sqrt{2}(2\pi)}\sqrt{\frac{1}{2\omega}}\begin{pmatrix}0 & \Lambda^{l,\lambda}_{k_\perp,k_z}(r,\theta)\\ -\Lambda^{l,\lambda}_{k_\perp,k_z}(r,\theta) & 0\end{pmatrix}$$

$$\Lambda^{l,\lambda}_{k_\perp,k_z}(r,\theta)=\begin{pmatrix}\frac{\lambda k_\perp}{\omega}J_l(k_\perp r)e^{il\theta} & i\left(1+\frac{\lambda k_z}{\omega}\right)J_{l-1}(k_\perp r)e^{i(l-1)\theta}\\ i\left(1-\frac{\lambda k_z}{\omega}\right)J_{l+1}(k_\perp r)e^{i(l+1)\theta} & -\frac{\lambda k_\perp}{\omega}J_l(k_\perp r)e^{il\theta}\end{pmatrix}$$

- [ ] Single program of python;
- [ ] Read an article;
- [ ] Learn the function;
- [x] Plant 6 tres;
- [x] Learn how to insert picture in markdown;
- [ ] PPT slide change;

12/27

😍 Make the most of yourself, for that is all there is of you.

- [x] Learn how to use notion;
- [ ] Read Feynman physics;
- [x] Draw the pictures;
- [x] Modify the English wirting assigment;

12/28~12/31

- [ ] Learn circular polarization light to twisted pairs;
- [ ] English learning;

12/28

😄 "Nothing is impossible, the word itself says 'I'm possible!'"

- [x] Finish the english work;
- [ ] Change the color of the picture;
- [ ] Review the music Tuerqi;
- [x] Calculate the averaged spin value;

- [x] Watch the New Year's party;

12/29

😉 "Excuses are the rocks where our dreams are crushed."

- [x] Prepare for the oral test;
- [x] Check the program;
- [ ] Go on the derivation;
- [ ] Listen to the concert of Golden chime;

12/30

😊 "Being happy doesn't mean that everything is perfect. It meas that you decided to look beyond the imperfections."

- [x] Go on the derivation;
- [x] Read an article;
- [ ] Listen to a classic song;
- [ ] Plant at least 12 trees;
- [ ] Draw the pictures of average spin.
- [ ] Draw the Intensity profile of a Bessel beam $I_{\perp}$.

12/31

😘 "Today I will do what others won't, so tomorrow I can do what others can't."

- [ ] Draw the pictures of average spin.
- [ ] Read three articles;
- [ ] Talk to teacher;
- [ ] Plant at least 8 trees;