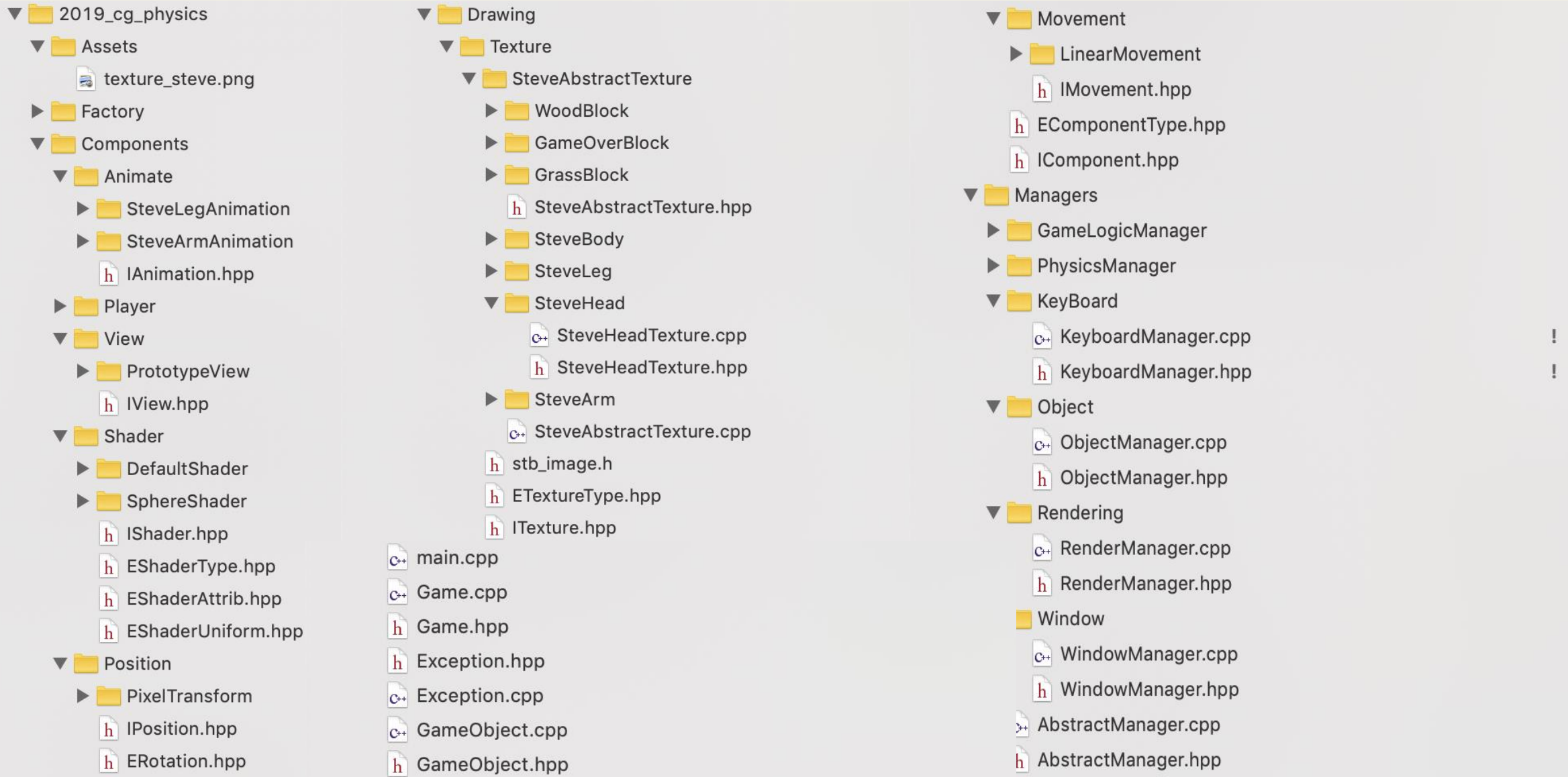
MINECRAFT BALLS

Spiel Einführung.

Framework


2019_cg_physics
Assets
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SteveLegAnimation
SteveArmAnimation
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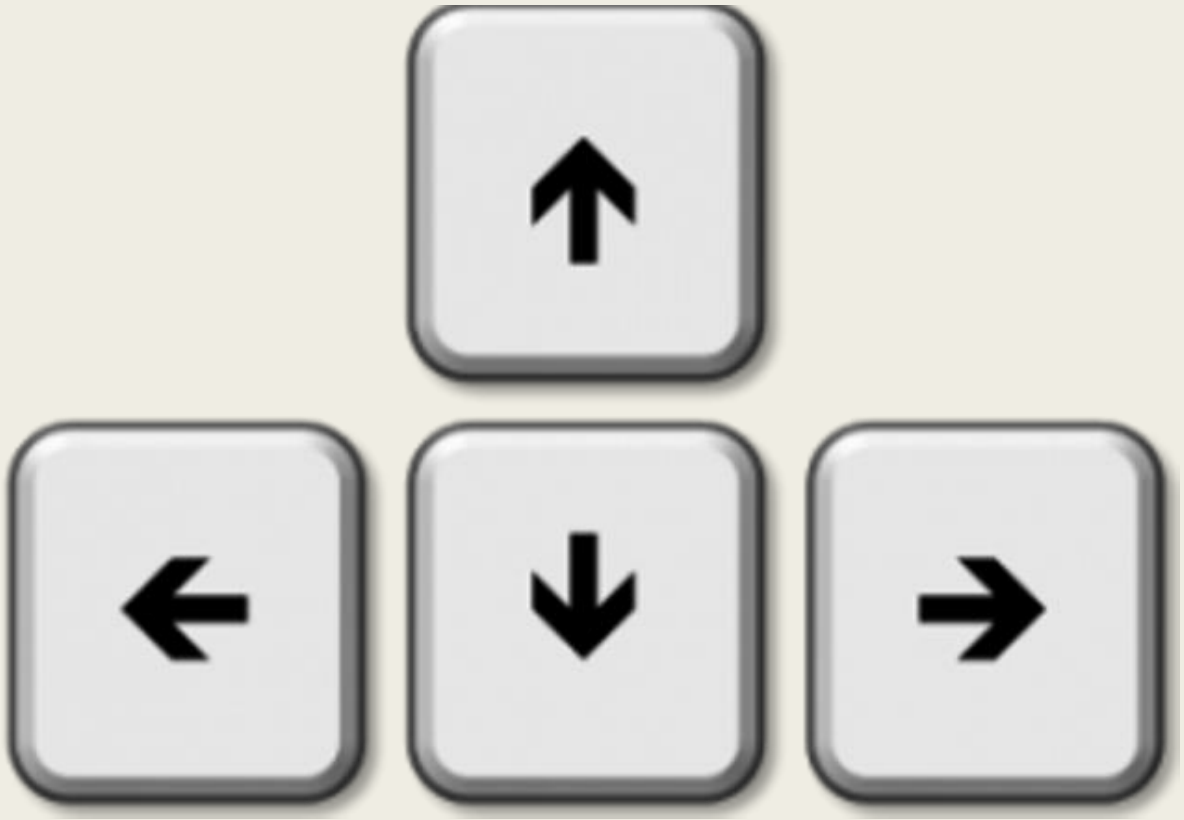
AbstractManager.hpp



STEUERUNG

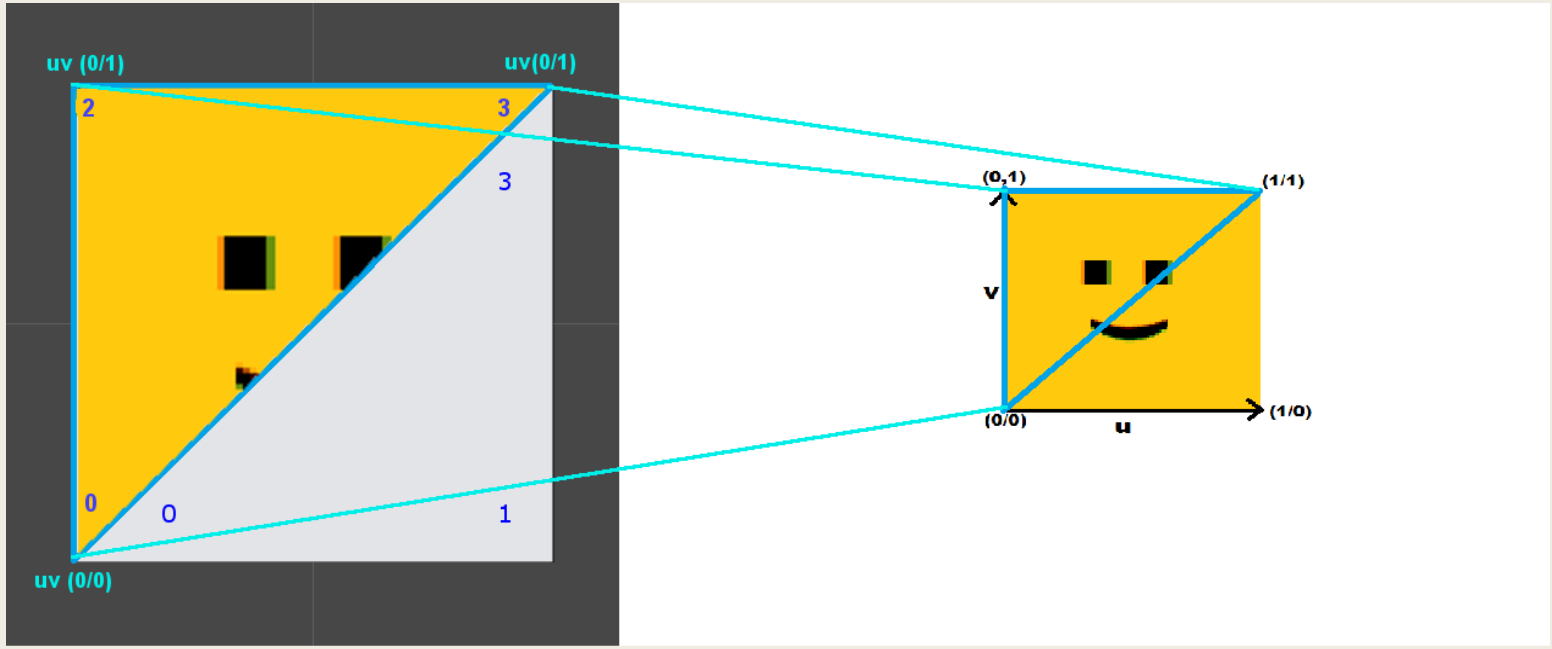
```
void KeyboardManager:: keyCallbackM(GLFWwindow* myWindow, int key, int scanCode, int action, int mod)
{
    if (((key == GLFW_KEY_ESCAPE) || (key == GLFW_KEY_Q))  &&
        (action == GLFW_PRESS))
    /* close window upon hitting the escape key or Q/q */
        glfwSetWindowShouldClose(myWindow, GL_TRUE);
    else if ((key == GLFW_KEY_RIGHT) && (action == GLFW_PRESS || GLFW_REPEAT== action)) {
        _dir = 0;
    } else if ((key == GLFW_KEY_LEFT) && (action == GLFW_PRESS|| GLFW_REPEAT== action)) {
        _dir = 1;
    } else if ((key == GLFW_KEY_DOWN) && (action == GLFW_PRESS || GLFW_REPEAT== action)) {
        _dir = 2;
    } else if ((key == GLFW_KEY_UP) && (action == GLFW_PRESS || GLFW_REPEAT== action)){
        _dir = 3;
    } else {
        _dir = -1;
    }
}
```

```
auto player = dynamic_cast<IPlayer*>((*it)->GetComponent(EComponentType::Player));
auto movement = dynamic_cast<IMovement*>((*it)->GetComponent(EComponentType::Movement));

if(player != nullptr && movement != nullptr) {
    //_dir = GetMoveDirection();
   // std::cout << _dir<< "\n";
    Vector3 velocity = Vector3(0.0, 0.0, 0.0);
    if(_dir == 0) velocity = Vector3(1.0, 0.0, 0.0);
    else if(_dir == 1) velocity = Vector3(-1.0, 0.0, 0.0);
    else if(_dir == 2) velocity = Vector3(0.0, 0.0, 1.0);
    else if(_dir == 3) velocity = Vector3(0.0, 0.0, -1.0);

    movement->SetVelocity(velocity);
}
```

Texture

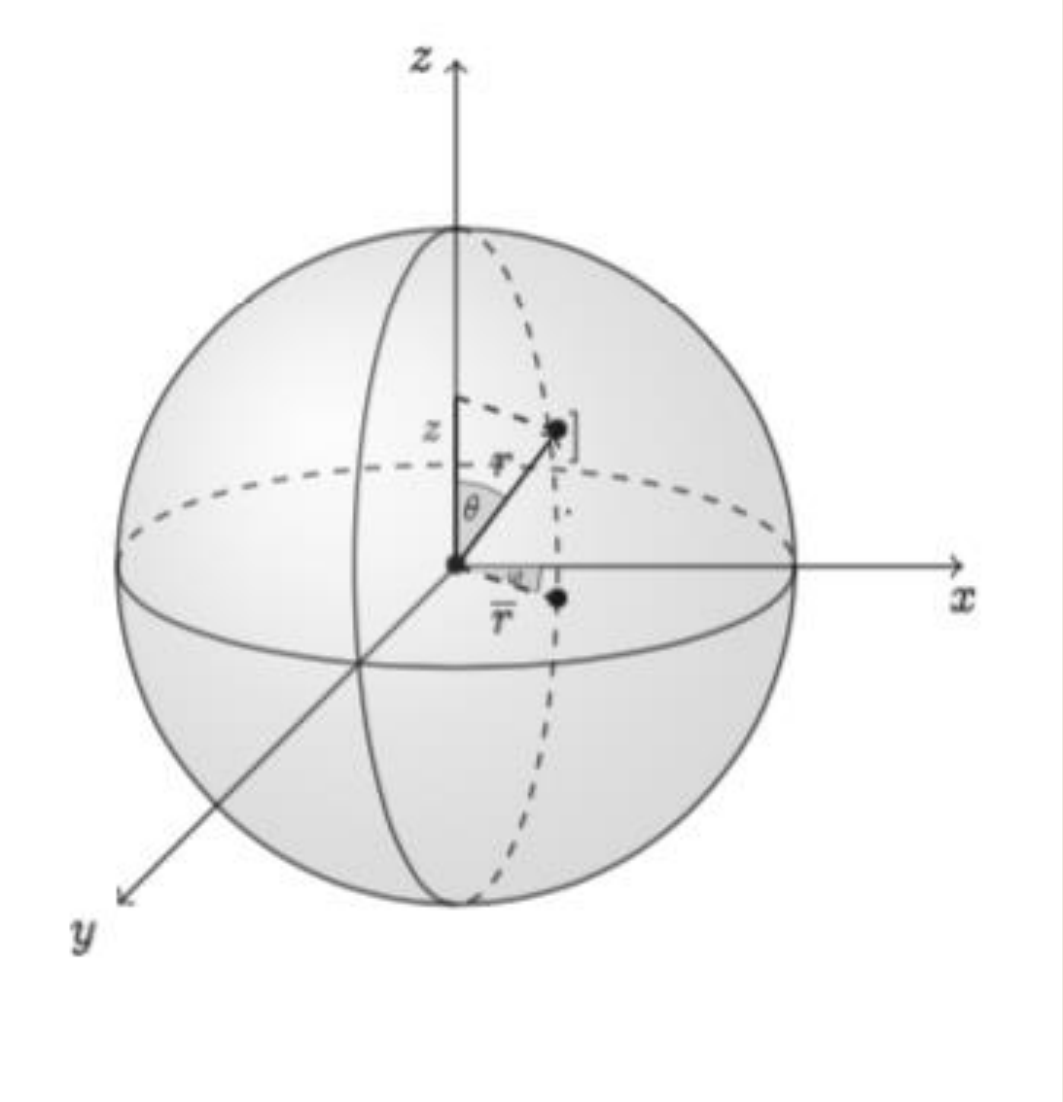


UV COORDINATEN

Sind zwischen 0.0 und 1.0

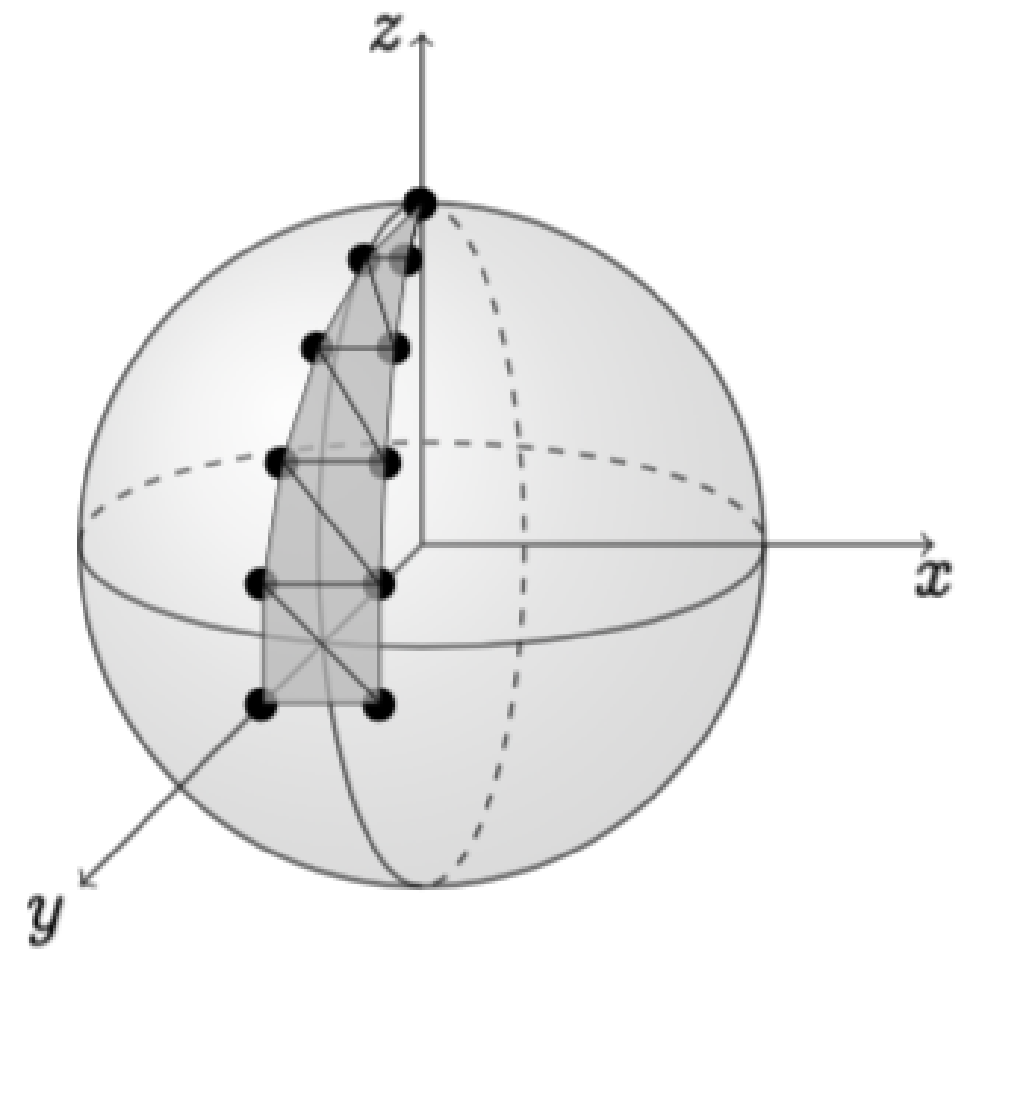

game over
game over

Scenen Graph Fri



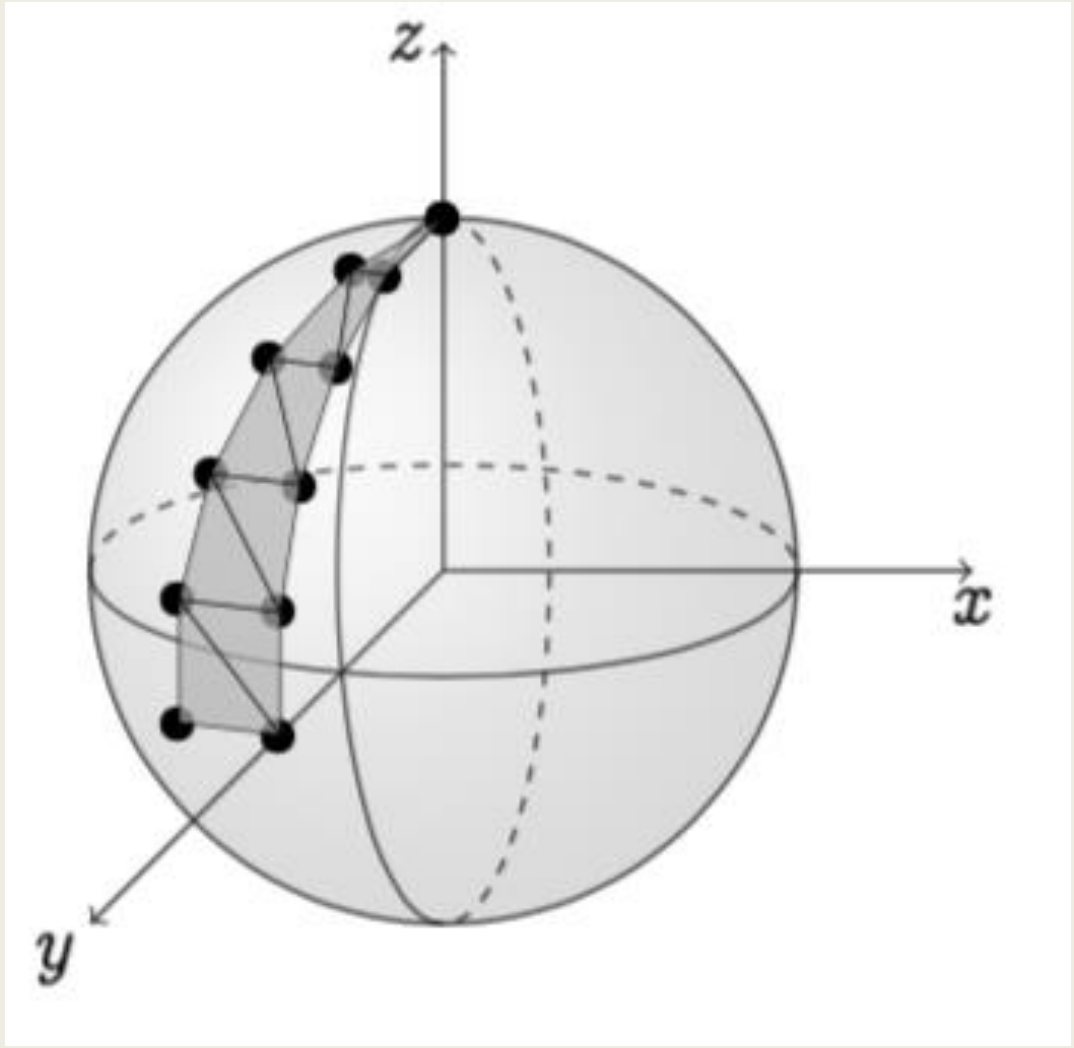
Kartesisches Koordinatensystem

$z =$	$r \cdot \cos\Theta$
$x =$	$r \cdot \sin\Theta \cdot \cos\varphi$
$y =$	$r \cdot \sin\Theta \cdot \sin\varphi$



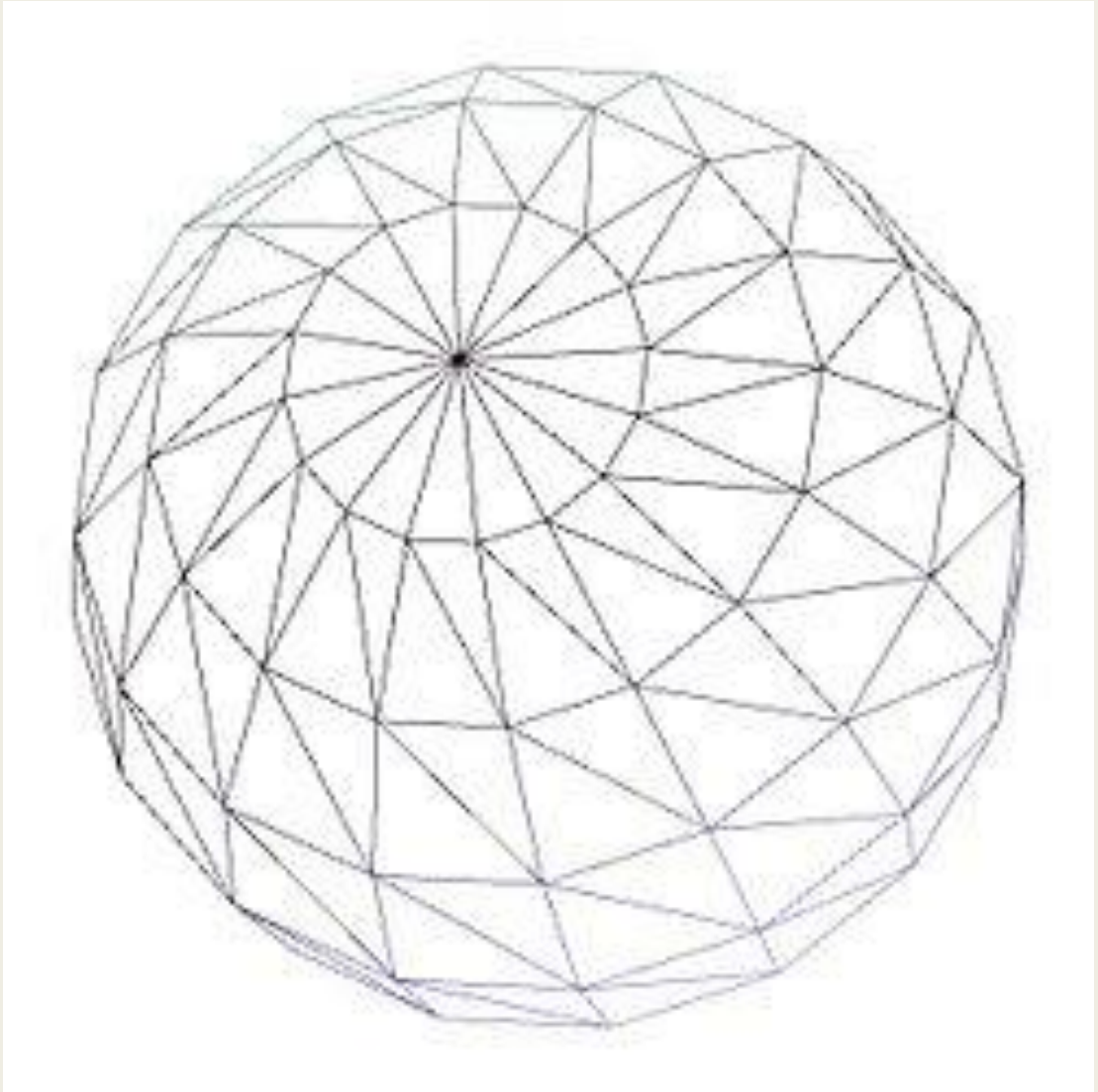
Triangularisierung

- Θ =0,20,40,60,80,100 …360;
- Φ =80,100;

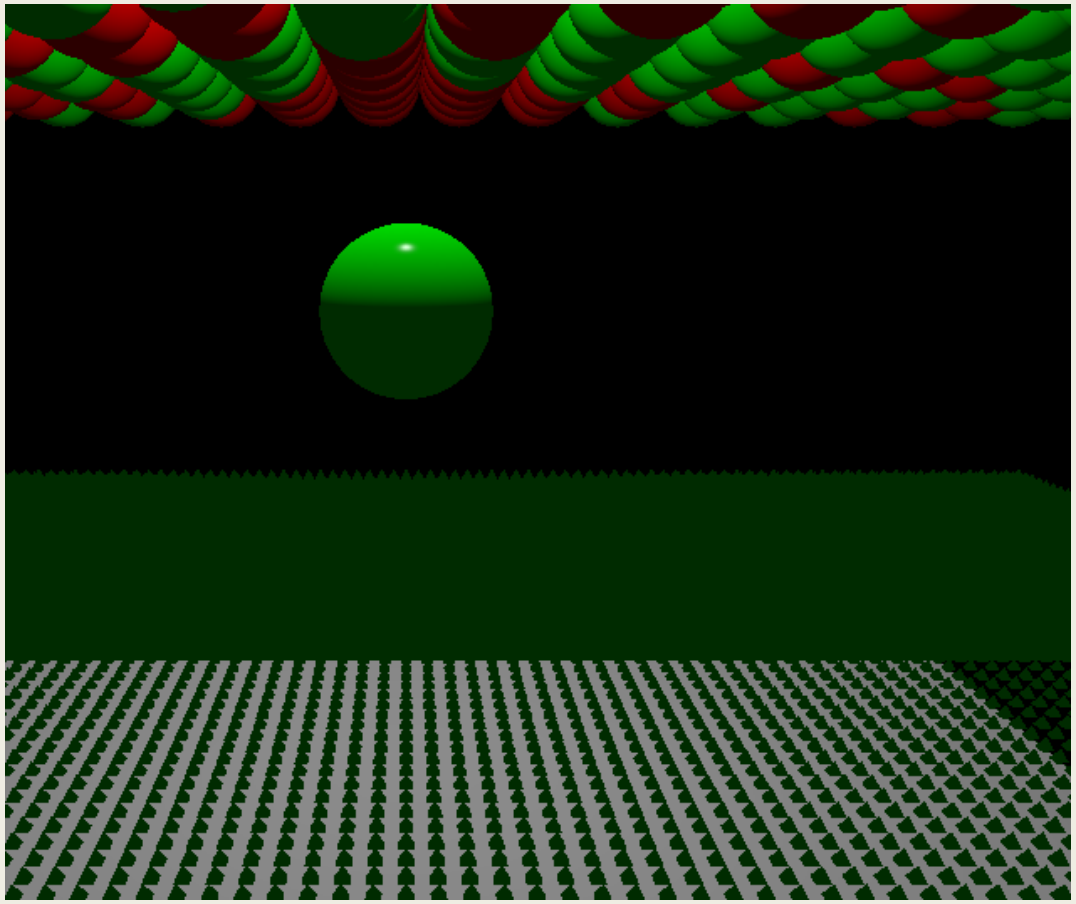


Triangularisierung

- Θ =0,20,40,60,80,100 …360;
- Φ =100,120;



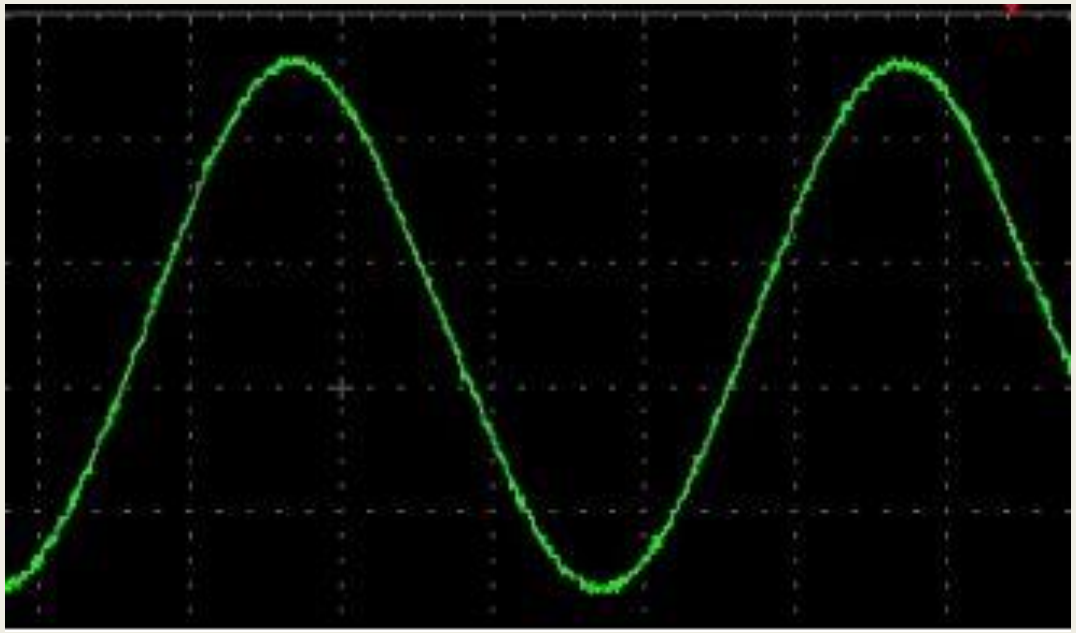
Triangularisierung



Physic

- y = -speed*(timeEnd -timeStart);
- x =currentPos.x;
- z =currentPos.z;

Physic



- x =(+/-)speed*(time)/per;
- y = std::abs(amp * sinf(speed * (time)))
- z =currentPos.z;