```
struct rotate_tuple {
    __host__ __device__
    tuple<float,float,float> operator()(tuple<float,float,float>& t) {
        float x = get<0>(t);
        float y = get<1>(t);
        float z = get<2>(t);
        float rx = 0.36f * x + 0.48f * y + 0.80f * z;
        float ry = 0.80f * x + 0.60f * y + 0.00f * z;
        float rz = 0.48f * x + 0.64f * y + 0.60f * z;
        return make_tuple(rx, ry, rz);
    }
};
device_vector<float> x(N), y(N), z(N);
transform(make_zip_iterator(make_tuple(x.begin(), y.begin(), z.begin())),
      make_zip_iterator(make_tuple(x.end(), y.end(), z.end())),
      make_zip_iterator(make_tuple(x.begin(), y.begin(), z.begin())),
      rotate_tuple());
```