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[ view=-3525, axis lines=middle, xlabel=Zeit  $t$  (x), ylabel=Auslenkung  $y$ , zlabel=Auslenkung  $z$ , xmin=0, xmax=20,
3[ domain=0:8*pi, variable=r, very thick, smooth, samples=400, black, ] (
,1*cos(1*r),1*sin(1*r));
3[ domain=0:8*pi, variable=r, dashed, samples=400, thin, gray ] (
,1*cos(1*r),0);
3[ domain=0:8*pi, variable=r, dashed, samples=400, thin, gray ] (
,0,1*sin(1*r));
3[only marks,mark=*,mark size=2pt,red] coordinates (pi/3,1*cos(1*pi/3r),1*sin(1*pi/3r));
- 1*sin(1*pi/3r) * 1 - 1*cos(1*pi/3r) * 1 sqrt(( )^2 + ( )^2)0.8/[- >, >= Latex, red, thick](axiscs :  $pi/3, 1 * cos(1 * pi/3r), 1 * sin(1 * pi/3r)$ );
[anchor=north west,fill=white,opacity=0.9,inner sep=4pt] at (rel axis cs:0.02,0.98)

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- Helix:  $x = t, y = A \cos(1t), z = A \sin(1t)$
- Projektionen:  $z = 0$  und  $y = 0$
- Roter Punkt: Momentane Position und die momentane Tangentialgeschwindigkeit