

LECCION DE GEOGRAFIA

EL SOL sale por el Este
y muere en Occidente.

e

COLOR EN CHINA

NO ES el color, es su sombra
viva.

No es la sombra, es el color
fino.

Azul
relámpago, amarillo
liso.

Sutil violeta, rojo
feliz.

Color en China echándose a volar,
circo del corazón y de los ojos
circo.

Ah biotz-begietan, cimbalo del día,
naranjas jubilosos, verde
río.

Linós al aire, al aire leve, niños
chinos.

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 551

9

PROBLEM SET 1

Due: Monday, September 10, 2012

1

1. A particle of mass m moves in a potential

$V(x) = \frac{1}{2}kx^2$

where k is a constant.

(a) Find the energy levels

for the ground state and the first

excited state.

(b) Calculate the expectation value

of the position x in the ground

state and in the first excited state.

(c) Calculate the expectation value

of the momentum p in the ground

state and in the first excited state.

(d) Calculate the expectation value

of the energy in the ground state

and in the first excited state.