The result is ~7×10^{-14}cm^2 and is considered reliable to within a factor of two.

Free electrons are introduced into the bulb by initiating 2-Mc/sec rf discharges of~0.002 sec duration, repetitive at 30 cycles per second, and phased so that the discharges occur at the extreme values of the 15-cycle/sec modulation field. (In the CRO displays of Fig. 1 the discharges occur at the extreme right and left hand sides of the trace.) The Na, K, and free electron resonances are shown in Figs. 1 (a), 1 (c), 1 (e). The interpretation of the free electron resonance, following Dehmelt, is that the free electrons remaining after the discharge become polarized by exchange collisions with the opitically pumped Na atoms.

When the discharge is turned on, the sodium resonance decreases by ~20%, while the potassium resonance increases by ~40% (see Fig. 1). We believe the decrease in sodium signal is due to two effects: (1) the discharge tends to "etch out" the sodium vapor, and (2) the free electrons exert a depolarizing effect on the sodium atoms. The potassium resonance increases, however, because the free electrons, polarized by the Na atoms, contribute constructively to the polarization of the potassium atoms via the electron-potassium exchange collisions. The potassium vapor is also etched out by the discharge, but the advantageous electron-potassium exchange effect is generally predominant. The alkali densities and hence the relative changes in the alkali resonances are temperature dependent.

The roles played by the Na and K atoms were reversed by running at higher temperatures (~200°C) and using a potassium arc. The observations are similar to those described above and are in agreement with the computed Na-K exchange cross section.

From the data we estimate that the electron-potassium exchange cross section is $<3\times10^{-14}$ cm^2, in agreement with Dehmelt's estimate for the electron-sodium cross section.[2] We have also obtained this value from unpublished data previously taken with an apparatus almost identical to Dehmelt's, but with potassium vapor only and a potassium arc.

These techniques may be useful in polarizing atomic and ionic species hitherto intractable to direct optical pumping. Experiments along this line are in progress.

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*This work has been supported by the U. S. Atomic Energy Commission.

[1] While preparing this manuscript for publication we learned that R. Novick, University of Illinois, has been developing an atom-atom exchange polarization experiment in a sodium-rubidium system; see R. Novick and H. E. Peters, following Letter [Phys. Rev. Lett. 1, 56 (1958)]. We wish to express our gratitude to Professor Novick for several interesting telephone conversations in which ideas common to both of these experiments were discussed.

[2] H. G. Dehmelt, Phys. Rev. 109, 381 (1958).

[3] The Na metal used (Cenco) contains a trace of potassium impurity so that a pre-mixing of the two metals was not necessary.

[4] This filter consists of Corning CS3-69 and CS4-97 plates. It is used to absorb the small amount of potassium resonance radiation emitted by the Osram sodium lamp.

[5] E. M. Purcell and G. B. Field, Astrophys. J. 124, 542 (1956).

[6] G. Herzberg, *Spectra of Diatomic Molecules* (D. Van Nostrand Company, New York, 1955).

INSTABILITY, TURBULENCE, AND CONDUCTIVITY IN CURRENT-CARRYING PLASMA.

O. Buneman [Phys. Rev. Lett. 1, 8 (1958)].

In the fourth line of paragraph 2, the equation $\omega_{pi} = (e\rho/M\epsilon/_0)^{\frac{1}{2}}$ should read $\omega_{pi} = (e\rho/M\epsilon_0)^{\frac{1}{2}}$. In the first display equation, the second term on the left-hand side should read $\omega_{pe}{}^2/(\beta u-\omega)^2$. In the sixth line after the table, the expression $18\,\omega_{pe}$ should read $18/\omega_{pe}$.

DIVERGENCELESS CURRENTS AND K-MESON DECAY.

S. Weinberg, R. E. Marshak, S. Okubo, E. C. G. Sudarshan, and W. B. Teutsch [Phys. Rev. Lett. 1, 25 (1958)].

In Eq. (1), "α" should be replaced everywhere by "γ". In Eq. (3), "α" should be replaced everywhere by "∂".

ANGULAR DISTRIBUTIONS OF TRITONS FROM THE $C^{14}(d,t)C^{13}$ REACTION.

W. E. Moore, J. N. McGruer and A. I. Hamburger [Phys. Rev. Lett. 1, 29 (1958)].

Line 21 reads: "$\underline{M}$ is the nuclear mass----"; but should read: "$\underline{M}$ is the reduced nucleon mass----".

CONFIGURATION MIXING IN THE C^{14} GROUND STATE.

E. Baranger and S. Meshkov [Phys. Rev. Lett. 1, 30 (1958)].

Equation (4) reads "$\delta^2/\alpha^2 = 0.14$"; but should